

## ARMY

THE GAZETTE OF THE LAND  
SEA AND AIR

## NAVY

SPOKESMAN OF THE SERVICES  
SINCE 1863

## JOURNAL

Washington, D. C., September 22, 1945

SINGLE COPIES ..... 20 Cents  
Published weekly. \$7 a year to organizations and clergies; \$5 a year to individual members of the Service

## Post-War Program

## U. S. MERCHANT MARINE

THE Post war American merchant marine in addition to being a potential factor in the United States bid for foreign trade, at the same time represents one of the most powerful military auxiliaries the world has ever seen.

Vessels which will ply the peacetime shipping lanes bringing American exports to all parts of the world, can with very little converting travel those same lanes as adequately armed supply ships capable of keeping up with the fastest convoys. Practically all of the vessels which will comprise our future merchant fleet have been built by the United States Maritime Commission during war time. Consequently the first and greatest emphasis was placed on their speed, maneuverability and strength. The second consideration was the possibility of placing these ships in a post war competitive world where speed and economy of operation would be the governing factors.

In approaching this problem the Maritime Commission has done a splendid desigining job. In the early days of the war the Commission built Liberty ships. Not because it believed that the Liberty ship was either a good Naval auxiliary or a good commercial possibility, but because it was directed by the administration to build ships and more ships capable of carrying supplies in large parcels.

Later, however, as the stress and strain of war began to relax, it became possible to give some thought to a faster vessel which while being a valuable appendage to the armed forces, would also have the advantage of taking its place in the immediate maritime scheme of things as soon as peace was declared and military needs would permit the resumption of carrying commercial cargo. Thus was born the Victory Ship.

Deadweight tonnage built from 1 January, 1942, to 1 April, 1945, totaled 46,550,000. Of this number 2,651 were Liberty ships and 328 were new competitive Victories with a solid post war commercial value. While it will be to the advantage of the Maritime Commission to dispose of as many Liberty ships as possible at a price either for scrap or otherwise, the vessel itself must like any tank, submarine or naval surface craft which has been sunk, be considered an expendable. The lumbering 9,000 ton slow vessel has done its wartime job and there is little more that can be expected of it.

Obviously the Commission with the close of the war with Japan found itself with an excess of tonnage far greater than could possibly be used by the United States alone. Although American operators, with the exception of a few have given little indication as to the actual number of vessels they estimate they can put to use, the Commission nevertheless pressed for legislation which would help it to dispose of its excess tonnage, i.e., tonnage that was not wanted by American operators.

To this end the Commission long before surrender asked legislation which would (1) prevent unfair competition including that which is discriminatory to American

(Please turn to Page 148)

Revive "Selection Out"  
For Navy and Marines

A "selection out" form of retirement was proposed in both the Senate and House this week for officers of the Regular Navy of the rank of rear admiral and below and for officers of the Regular Marine Corps of the rank of major general and below.

Representative Carl Vinson, chairman of the House Naval Affairs Committee, and Senator David I. Walsh, chairman of the Senate Naval Affairs Committee, introduced identical bills on the subject after consultation between themselves and with officers of the Navy Department.

Both the plan to retire officers "whose services could no longer be efficiently utilized" and a provision to retire all officers below the rank of Fleet Admiral at 62 years of age, meet with the approval of officers of the Navy Department, the two chairmen said.

It is recalled that the Navy adopted a system of "selection out" in 1899 but abandoned it in 1914.

Under the proposals the "selection out" would be recommended by boards of officers who would review the records of all officers of the Navy and Marine Corps of the ranks of rear admiral and major general and below. The recommendations of the boards would be "submitted by the Secretary of the Navy to the President for approval or disapproval, in whole or in part," a procedure paralleling that followed by the pre-war boards which selected officers for promotion.

Under the bill officers of flag or general officer rank selected for retirement would be placed on the retired list at the highest rank held by them on the active list and with retired pay equal to 75 per cent of the highest pay to which they were entitled while on the active list.

Officers of lower ranks selected for retirement would be retired with their highest active rank if this "performance of duty in such rank has been satisfactory," but if they had "not rendered satisfactory service in the highest rank held on the active list, he shall be placed on the retired list with the next lower rank but not lower than his permanent rank." Retirement pay would then be at the rate of 2½ per cent of the active-duty pay of the rank in which retired, multiplied by the number of years of service for which entitled to credit in the computation of their pay on the active list, not to exceed a total of 75 per cent of said active-duty pay.

There is a further provision that the President may discharge from the service without advanced pay any officer who is serving in his permanent rank and who shall have completed less than seven years of active commissioned service. This provision as well as that for the selection out of officers of the Navy in the rank of captain and below and of officers of the Marine Corps of the rank of colonel and below, is effective only until the 30th of June of the fiscal year following that in which the present war is officially ended. However, the selection out of flag and general officers and the 62 year retirement provisions would be permanent law.

The full text of the proposed measure follows:

(Please turn to Page 150)

## Gen. Marshall's Talk

Declaring that the Army expected to reduce its point system to 60 by 1 Nov., Chief of Staff, General of the Army George C. Marshall, this week told Congress that the Army expects to release 450,000 men this month, about 550,000 in October and between 700,000 and 800,000 a month thereafter until such time as it is possible to determine the number of men essential for occupation.

Speaking to more than 300 Congressmen gathered in the auditorium of the Library of Congress, General Marshall advised the legislators with respect to the problems confronting the Army in its attempts to speed up the demobilization program.

"We may reach a point in the late winter," he said, "when the point system will cease and all men with two years service will be released."

At the outset, General Marshall (Please turn to Page 148)

Blames War Dept. For Waste  
in Use of Medical Personnel

Charges that the future of American medicine is being jeopardized because of the draft, and that the Army used its doctors in an antiquated and wasteful manner that resulted in too few of them on the fighting lines and too many elsewhere, were made this week by Col. W. Paul Holbrook, MC, AUS, in testimony before the Senate Military Affairs Committee.

Col. Holbrook, who was specifically assigned to duty with the Committee by Under Secretary of War Patterson to obviate possible embarrassment insofar as his superiors were concerned, told the Committee that the home front's health was dangerously neglected when the Armed Forces took 60,000 doctors to care for 12 million men and left 90,000 for the 120 million civilians at home.

Asked directly who is to blame for the situation, Colonel Holbrook said that the War Department itself is to blame for the "antiquated plan." He pointed out that the Surgeon General of the Army is not on the General Staff while the head of the WACs is.

Colonel Holbrook said that the Army, now doing a "satisfactory" job of releasing doctors, expects to have 17,000 back in civilian life by 1 Jan., a 3,000 increase over an earlier estimate. Part of this, he said, will be accomplished by letting out surplus doctors regardless of their points. If the staffing ratio can be reduced, he said, this figure will be increased.

## Need New Organization

Colonel Holbrook described the future of American medicine as jeopardized because of the draft, and suggested it may be necessary soon to return to their studies medical students who have had one year in the armed services. In addition, the Army Colonel and Committee investigator proposed a new concept for the Army Medical Department under which mobile organizations would replace many of the static units.

In connection with the mobile organizations, Colonel Holbrook said that "unfortunately" our Medical Department entered this year with almost exactly the

(Please turn to Page 150)

Army Boards Studying  
Post-War Organization

Army boards in Washington and at the Pacific and European headquarters are now engaged in studies looking forward to the post-war organization of the War Department and the Army and its military units and personnel system.

The General and Special Staffs in Washington, while engaging in their own studies and formulating their own recommendations, are also drafting questions on the various angles of the post-war problems for submission to the boards which have been set up by General of the Army Dwight D. Eisenhower in Europe and by General of the Army Douglas MacArthur in Japan.

Each of the overseas boards in viewing the problems of organization and personnel from the angles of its own successes and shortcomings as demonstrated by its experience as well as from the enemies' viewpoint as is now being revealed to them by examination of former enemy leaders and inspection of enemy official reports and papers.

Lt. Gen. Alexander M. Patch, former commander of the Seventh Army in Europe and now commander of the Fourth Army in Texas, has been brought to Washington for temporary duty in the office of General of the Army George C. Marshall, chief of staff, where he heads a special board studying post-war organization of the Army. He has set up a temporary office in the Pentagon Building and already has taken testimony from a number of ranking officers in the War Department.

In addition there are special studies underway in the three administrative commands, the Army Ground Forces, Army Air Forces, and Army Service Forces.

Furthermore, studies are still in progress on the National Guard and Reserve Corps. Although the post-war policies on these two great reserve components were approved and distributed a couple of months ago, they are not by any means final. A new board was convened in the War Department a short while ago, composed of two representatives each from the Regular Army, the National Guard and the Reserves, to make further studies pertaining to the reserve components. It is understood that this board has completed its work and that changes in the basic policies will be announced shortly.

Also close to final approval is a new basic troop plan, now before the G-3 section of the War Department General Staff.

Problems being overhauled before these various overseas and Washington boards include formulation of permanent promotion policies to provide promising careers for efficient officers while at the same time having provisions for the removal by retirement or dismissal of officers who fail to measure up to standards.

A suggestion receiving considerable attention is the abandonment of branches in the Army, so that all Regular officers would be commissioned merely in the United States Army without reference to any arm or branch, except possibly in such specialized services as the Medical and Chaplains corps.

(Please turn to Page 148)



## Demobilization Progress

Washington Post—"Criticism of the Army's discharge system has in some cases been based on lack of understanding of the general principles on which discharges are based. Nevertheless, the 'show me' attitude of Congress and the public has had some salutary consequences."

Philadelphia Bulletin—"It is generally recognized that the demobilization of service men is a complex problem. Congressmen are accusing the War Department of bungling the job. There are innumerable individual complaints, unjustifiable delays and injustice. Perhaps the most important criticism is directed against the apparent policy of keeping men in uniform idle—and women, too—while the military authorities make up their minds at leisure whether they are really needed or not."

## Change Secretary of War

President Truman 18 Sept. nominated Under Secretary of War Robert P. Patterson to be Secretary of War, succeeding Henry L. Stimson. At the same time the President announced that Assistant Secretary of War John J. McCloy and Assistant Secretary of War for Air Robert A. Lovett had also submitted their resignations but that he was not accepting them at present.

Following the announcement Under Secretary of War Patterson said:

"With the inspiring leadership of Secretary Stimson the War Department reached its highest level of service to the Nation.

"If my nomination to be Secretary of War is confirmed, it will be my aim to maintain, to the best of my ability, the high standard set by Secretary Stimson."

At his final press conference, 19 Sept., Secretary Stimson said:

"The United States is now not only at the peak of its military strength but it has attained an influence and leadership among all nations that is unprecedented. Now that we have arrived at that position we must make sure that we conserve it and use it in the cause of justice and peace throughout the world.

"In my opinion, the maintenance of this preeminent position will depend on two factors. One of these is the acceptance by our people of the military and naval strength that necessarily go with leadership in the world today. The State Department will have increasing difficulty in making our voice effective in the councils of nations unless our people and our Government show their readiness to carry the inconveniences and burdens and sometimes sacrifices which accompany such leadership under the present unstable conditions.

"The state of our military establishment in the future must be the constant concern not only of our Government but of our people. In particular, we must be alert that no system is established—however palatable it may seem—which fails to provide the power we need at this stage of the world's development.

"The second factor necessary to preserve our leadership is an attitude of trust and frankness on our part toward all nations working for collective security. It has been the inescapable conclusion of my years spent as Governor General of the Philippines, as Secretary of State and Secretary of War that cynicism and suspicion on our part can only breed a like response among those we suspect. By this I do not mean that our relations with other Governments should ever lack a practical sense of realism. But in the long run, I am convinced that a full and frank attitude of trust by our Government will strongly tend to lead to a like attitude on the part of all members of the brotherhood of nations.

"In the present state of world affairs a strong military establishment is essential. I fervently hope that this condition will not always prevail."

Paying tribute to the abilities of General of the Army George C. Marshall, Secretary Stimson said:

"In spite of the great prestige which General Marshall justly holds among his countrymen, I doubt that many fully realize how his leadership has counted. I know, because we could talk freely of it in private, how clearly he saw the inevitable involvement of this nation in the war and tried by every means at his disposal to prepare us for it.

"A man in high office cannot always make public the things that are in his heart. Yet in his Biennial Report in July, 1941, General Marshall uttered as strong a warning to the nation as he appropriately could. His recommendation that the Selective Service men, the National Guardsmen and the Reserve officers taken into the Army for a year of service

New York Sun—"If the Army has made mistakes, if it is making them now, if its facilities for separating men are too limited or too clogged, Congress should do what it can to correct mistakes and remove administrative bottlenecks that unduly delay discharges."

Indianapolis Star—"Get them back into constructive, usefulness. Some among those under arms may have soft berths and be getting more money than in civil life. That is no excuse for keeping a large military establishment or delaying demobilization."

Chicago Tribune—"Either the Army command hasn't the capacity to demobilize promptly, or the military bureaucrats don't want to do so."

Philadelphia Inquirer—"The ugly insinuation has crept in that high officers want to hang on to a big Army in order to keep their rank. That rumor, surely,

must be disposed of."

Washington Star—"The sooner the air is cleared, the better off everybody will be. If some Senators think a better job can be done, then steps must be taken to improve the situation. By the same token, however, if they are wrong, there should be an end to all loose talk and ill-formed allegations on the subject."

Salt Lake Telegram—"Naturally, mothers and fathers, wives and sweethearts want their men home even though they may have served only a short time."

Scranton Times—"Time and again the Army chiefs have said they did not want men in their thirties for overseas service. They preferred those this side of thirty but took them at a time when a huge army was thought necessary. Thousands of men past thirty and less than thirty-five now overseas will have to 'sweat it out' until further changes are made."

be retained beyond that period touched off a violent debate in the Congress. General Marshall fought to make clear the pressing need to hold these men in the service. To release them would have destroyed the Army which later we required so urgently. He won his battle by a single vote in the House of Representatives.

"When Japan attacked, General Marshall's vision was displayed in the global view which he immediately took of our situation. From the beginning his concept of proper strategy was that we must defeat Germany first in order to gain victory in the shortest possible time."

## Slash Naval Funds

President Truman this week asked Congress to rescind a total of nearly \$17 billions of appropriations now available to the Navy Department and the naval services.

Furthermore, the President told Congress that he plans a "continuing review of naval appropriations with the view of recommending further adjustments as conditions warrant."

He also suggested that "the appropriation committee of Congress give consideration to a complete review of existing legislation authorizing the construction of naval vessels."

"In making these recommendations for reductions," the President wrote to Congress, "consideration has been given to the tremendous problem of demobilization and the yet undetermined requirements for a peacetime Navy."

The cuts recommended include (1) proposed rescissions of several appropriations available in the fiscal year 1946, amounting to \$8,305,859,122; (2) proposed rescissions of several contract authorizations available in the fiscal year 1946 amounting to \$3,212,442,131; (3) proposed rescissions of the unrequired balances of prior year appropriations, amounting to \$5,306,252,674, and (4) proposed decreases in the amounts which may be transferred from various naval appropriations to the appropriations for printing and binding, and contingent expenses, for the fiscal year 1946.

The reductions are spread out over the following appropriation headings: Office of the Secretary, Bureau of Naval Personnel (training facilities), Bureau of Ships, Bureau of Ordnance, Bureau of Supplies and Accounts, Bureau of Medicine and Surgery, Bureau of Yards and Docks, Bureau of Aeronautics, Marine Corps, increase and replacement of vessels, repair facilities, Coast Guard, and Navy Department salaries.

## Rank for Gen. Chennault

Bills were introduced this week by Senator Overton (Dem., La.) and Representative McKenzie (Dem., La.) which would permit Maj. Gen. Claire L. Chennault, former commanding general of the Fourteenth Air Force, to retire in his present temporary rank of major general.

General Chennault, who was retired in 1920 for physical disability incurred in line of duty in the rank of captain, still holds that permanent rank.

Meanwhile, Senator Thomas (Dem., Utah) chairman of the Military Affairs Committee, plans to call General Chennault, who is now in the United States, before that body for questioning concerning conditions in the China Theater and his reasons for relinquishing his command of the Fourteenth Air Force in that theater.

## Naval Reserves Organize

A group of Navy, Marine Corps and Coast Guard officers have organized a new association dedicated to "preventing World War III by maintaining an adequate national defense founded upon widespread scientific research."

The new Reserve Officers' Naval Services, which seeks membership from among men and women reservists of all ranks of commissioned, warrant officer and above, has an office in the Navy Department Annex, room 1074, and one at 1726 Pennsylvania avenue, N. W., Washington, D. C., where the Reserve Officers' Association, an army organization, also has offices.

The organizers of the association say that "through the medium of such an organization interest in all matters pertaining to the Navy can be focused on policies and legislation and that a responsible body of influence can be made available at all times."

The first national president is Capt. George S. Piper, USNR, until recently aide to Under Secretary Bard. He and the following other national officers will serve until an election to be held later than 31 Jan. 1946.

First vice-president: Col. James J. Keating, USMCR; Second vice-president: Lt. Comdr. Douglas Fairbanks, Jr., USNR; Third vice-president: Lt. David Ward, USNR; Secretary: Lt. Comdr. Harry Flood Byrd, Jr., USNR; Treasurer: Capt. Charles Carroll Morgan, USNR; and Executive director: Lt. Comdr. B. J. (Jack) Darnelle, USNR.

Members of the executive committee, in addition to Captain Piper, Lt. Commander Fairbanks and Lt. Commander Byrd, are: Comdr. Eugene Caruel, USNR; Comdr. Thurmond Chatham, USNR; Capt. Roald J. Chincok, USNR; and Capt. Sidney W. Souers, USNR.

The interim advisory council of RONS, otherwise the organization committee of the new group, includes in addition to the officers and executive committee members, the following: Commo. Lewis L. Strauss, USNR; Commo. Paul Foster, USNR; Lt. Comdr. Roger Firestone, USNR; Comdr. Harris Kempner, USNR; Lt. Comdr. Minor Hudson (CEC) USNR; Capt. Kirby Smith, (CEC) USNR; Lt. (jg) Edward Haniff, USNR; Lt. Comdr. Jacob Lewiton, USNR; Maj. Elmer Glidden, USMCR; Capt. Kathryn Sullivan, USMC (WR); Capt. Lucy B. Linton, USMC (WR); Lt. Comdr. John H. Lumpkin, USCGR; Lt. John Blaffer, USCGR; Capt. W. L. Nelson (SC) USNR; Comdr. Earl D. Chesney (SC), USNR; Capt. W. M. Craig (MC), USNR; Comdr. E. J. Gough (MC), USNR; Lt. Comdr. David J. Fitzgibbon (DC), USNR; Capt. Benwick McIver, USNR; Lt. Comdr. H. C. Beers, USNR; Lt. Comdr. John H. Tolson, USNR; Lt. H. G. Putnam, USNR; Comdr. Joe Gardner, USNR; Lt. Francis Brawley, USNR; Lt. (jg) Murial M. Partridge, W-V(S), USNR; Lt. Margaret Dives, USCG (WR); Lt. Comdr. Helen Barry O'Neill, W-V(S), USNR; Lt. Comdr. Clark M. Clifford, USNR; Capt. Gene Markey, USNR; Lt. (jg) Carolyn G. Browning, W-V(S), USNR; Comdr. J. J. McGarraghan (CEC), USNR; Lt. Theodore Chase, USNR; Lt. Comdr. John M. Schiff, USNR; Comdr. Freeman Cutler, USNR; Comdr. Robert M. Reynolds, USNR; and Lt. Robert A. Erwin, USNR.

## Gen. Eaton to Omaha

Brig. Gen. Ralph P. Eaton, who as chief of staff of the XVIII Corps (Airborne), participated in airborne operations in Holland, Germany, the Ardennes and the Elbe River, has been assigned as Chairman Field Agencies, Section VII, War Department Manpower Board, Omaha, Nebr.

## House Passes Enlistment Bill

Amending the bill to permit one year enlistments, the House this week passed the Voluntary Enlistment Bill designed to encourage enlistment as a means of building up the Army and Navy.

Passing of the measure followed lengthy floor debate, during which members of the House Military Affairs Committee argued over various other amendments many of which were also adopted.

In addition to the one year enlistments, the House also agreed to an amendment offered by Representative Sparkman providing that any person who enlists after 1 June 1945, in the seventh grade, may be promoted to the sixth grade upon completion of 6 months' active service, provided he has met the qualifications.

Also agreed to was an amendment to the mustering out payment amendment. Under the bill as drawn section 7 covered only the \$300 mustering out payment as provided for under the Mustering-Out Payment Act. It overlooked entirely the payments of \$200 and \$100. The amendment provides that the payments be made in a lump sum.

The House agreed to include the Bland amendment which would include the Coast Guard in any part of the bill where the terms "Navy" or "Naval Establishment" is used. This provision brings the Coast Guard under the provisions of the bill. Presently the Coast Guard is under the Treasury Department during peace times. The amendment is intended to include them and give them the benefits of the bill.

With respect to allowances in lieu of quarters the House adopted the May amendment which provides that family allowances shall be for the period during which the family allowance payments are authorized to be made under the act. Under present conditions an enlisted man may, at his option, receive the monetary allowances in lieu of quarters for dependents. As set forth in the Pay and Allowment Act the allotment is \$30 for the first child and \$20 for each subsequent child. The amendment makes it clear that such payments are only authorized as set forth in the Act.

Following the House action, the measure was sent to the Senate. Senator David I. Walsh introduced an identical bill and asked that it be referred first to the Committee on Naval Affairs. After the bill has been considered by the committee on Naval Affairs the Senator said he would ask that it be immediately referred to the Committee on Military Affairs.

The Senator said that in the past, our peace time Army and Navy have been composed entirely of volunteers. Practically all persons who entered the Naval service immediately prior to and during the war are now anxious to be released he said. Very few of them show any indications of re-enlisting and making the Naval Service a career.

"They are not applying to remain in the Naval Service due chiefly to the fact that under existing laws they cannot obtain certain benefits provided by Congress until after they are discharged or placed on an inactive status," Senator Walsh said.

## Navy Bars Parrots

The Navy Department this week issued an order prohibiting the transportation of parrots aboard ships entering United States ports.



## Expansion of Regular Navy and Marine Corps

The first legislative step toward expansion of the post-war Regular Navy and Marine Corps by commissioning in the permanent establishments, Reserve Officers and former commissioned warrant, warrants, and enlisted men of the Regular establishments who served in commissioned grades during the war, was taken this week by Senator David I. Walsh and Representative Carl Vinson, chairmen of the Senate and House Committees on Naval Affairs.

The two Congressional Naval leaders introduced bills which would permit the commissioning of such officers in the Regular Services temporarily in their present grades.

No provision was made for a promotion system nor for the method by which permanent grades would be determined, except that the bills specify that the new officers would retain their temporary higher appointments as long as and in the same manner as other officers of the Regular Navy and Marine Corps.

The legislation is an endeavor on the part of Chairman Vinson and Chairman Walsh to establish a personnel strength for the Navy and Marine Corps in order that plans may be more firmly made and a speedy demobilization effected within these services.

Chairmen Walsh and Vinson stated the bill was prepared by them after consultation with officers in the Navy Department and that the bill represents in a "general way" the views of these officers. They stated also they expected to hold hearings on the measure in the near future and at that time they would have officers of the Department, as well as other interested persons, appear before the Committee to express their views.

The Bills authorize 500,000 enlisted and 58,000 officer personnel or a total of 558,000 personnel for the Navy and 100,000 enlisted and 8,000 officer personnel or a total of 108,000 personnel for the Marine Corps. During the war the peak numbers of personnel in those services was 3,389,000 for the Navy and 482,500 for the Marine Corps.

The Navy and Marine Corps already have instituted vigorous recruiting campaigns for volunteers in order to meet enlisted personnel requirements.

In order to meet officer requirements for the post-war Regular Navy and Marine Corps an opportunity should be afforded to those officers of the Naval Reserve and Marine Corps Reserve and former enlisted and warrant personnel of the Navy and Marine Corps who served in commissioned grades during the war to transfer to the officer list of the Regular Navy Establishment.

"These personnel performed their duties admirably during the war" the chairman said "and the way should be opened in order that they may continue to serve in the Regular Navy and Marine Corps if they so desire."

Former officers who served on active duty during World War II and who were separated from such services under honorable conditions by discharge or resignation are also eligible for appointment.

Personnel appointed to permanent grades or ranks under the proposed legislation will be appointed temporarily to the same grade and rank and with the same precedence in the Regular Navy or Marine Corps as they held in their Reserve status, and will retain this temporary higher appointment as long as and in the same manner as will other officers of the Regular Navy and Marine Corps.

Appointments in the Regular Services are to be made pursuant to regulations prescribed by the President. These regulations are to include the standards and qualifications for appointment, the determination of lineal position and precedence of appointees, and provisions for the assignment of running mates to officers appointed to the Staff Corps of the Regular Navy.

### Capt. Nelson to AFRS

Capt. Harmon O. Nelson reported in to Armed Forces Radio Service headquarters, Los Angeles, on temporary duty after 21 months in the Pacific, it was announced by Col. Thomas H. A. Lewis, Commandant of AFRS.

## Committee Demobilization Hearing

Continuing hearings on demobilization, the Senate Military Committee had as witnesses before it this week, Under Secretary of the Navy Artemus L. Gates, Vice Adm. Louis E. Denfeld, Chief of Bureau of Personnel, USN, and Brig. Gen. G. C. Thomas, USMC.

Under questioning, Secretary Gates stated that the Navy is not justified in returning all naval personnel to civilian life at present; that there will not be any unnecessary delay in separating them from the Navy but that all will have to be treated fairly, especially those who have been overseas in combat; and that there has been a change in the point system which will favor men with large families. Enlisted men who have reached the age of 30 and have at least three children are to be discharged immediately, but no one will be released for economic and reconversion purposes.

Admiral Denfeld revealed that the Navy intends to complete specialist programs in radar and along other lines in spite of the ending of the war in the knowledge that this will be of value to the Navy and to the students, the intention being, in addition, to live up to its promises along educational lines.

To separate 764,000 enlisted men and 75,000 officers by Christmas and 3,000,000 by 1 Sept. 1946 was declared the goal of the Navy, by Admiral Denfeld, and to reduce its size to 500,000 enlisted men and 50,000 officers by that time to man the recommended ship-size of that service.

According to Admiral Denfeld, the speed of separations will be determined by the manpower needs of the Navy, the transportation possibilities, and administration connected with discharging the personnel. Some of the delay will be due to having to take ships to safe harbors and preparing many of them for lay-up.

Replying to questioning Admiral Denfeld said that as of 1 August 62 per cent of the personnel were outside the United States—1,997,000 being in the Pacific Theater, 1,270,227 in the United States, and 133,640 in the Atlantic Theater.

Brig. Gen. Gerald C. Thomas, USMC, testifying for the Marine Corps stated that at the capitulation of Japan the following plan was put into effect: It (1) Directed the release of all men with a critical score of 85 or more points. This involved 40,199 men, 15,405 being overseas and 11,278 more undergoing medical treatment. (2) Directed the release of all limited duty specialists regardless of point scores. (3) Reduced its selective service call for October from 6,800 to 4,150. (4) Discontinued the enlistment of Women Marines and directed the separation of women with 25 or more points. This affected 4,400. (5) Directed that no men with 70 or more points be sent overseas and that no additional women be sent overseas.

General Thomas said that on the basis of changes in Marine Corps plans additional steps were taken on 12 Sept. as follows: The critical score was reduced to 70 thus making eligible for separation 47,072 enlisted personnel; cut the age for release from 38 to 35. This affected 9,000 officers and enlisted men; directed that no men with 40 or more points should be sent overseas; and asked Selective Service for only 1,000 men per month for October and November.

According to General Thomas it is expected that the Marine Corps will be demobilized to post-war strength by 1 Sept. 1946.

### Gen. Terry to India

Maj. Gen. Thomas Alexander Terry, Commanding General of the Second Service Command with headquarters at Governors Island, has been ordered to assume command of U. S. Forces in the India-Burma Theater, relieving Lt. Gen. Raymond A. Wheeler, who has been recommended to be Chief of Engineers, USA.

General Terry's successor has been selected but no announcement will be made until he arrives to take over his new duties at an early date.

General Terry, born at Abbeville, Ala., on 22 Nov. 1885, was graduated from the United States Military Academy in February, 1908, and was commissioned a second lieutenant in the Coast Artillery Corps. He became a major general 1 Oct. 1940.

## Chief of Staff, AGF

Lt. Gen. J. Lawton Collins, known for his combat leadership in the European and Pacific Theaters, has been assigned as Chief of Staff of Army Ground Forces, succeeding Maj. Gen. James G. Christian, the office of General Jacob L. Devers, Commanding General of AGF, has announced. General Christian has been given an assignment in the Pacific Theater.

General Collins, commander of the VII Corps throughout the entire European campaign, became known as the conqueror of Cherbourg after he took his organization into action north of Le Grandveay on D-Day in Normandy. He presented Monsieur Paul Reynaud, Mayor of Cherbourg, a flag made of parachutes carried by American paratroopers in their Normandy leaps, and was one of the first American generals to score a major triumph on the Continent.

Shortly following the Japanese attack on Pearl Harbor, General Collins was given command of the 25th Infantry (Tropic Lightning) Division, and sailed with this unit to the South Pacific. He led the 25th against the defenders of Guadalcanal and the Solomon Islands, later taking it to Munda where again his forces delivered effective blows against the Japs.

### Navy Nurses to GWU

The following officers of the Navy Nurse Corps will report on 24 Sept. 1945 to George Washington University, for a course in Dietetics:

#### Regular Nurse Corps

Lt. Virginia M. Bates  
Lt. Leona A. Bickler  
Lt. Grace O. Pollard  
Lt. (jg) Ruby L. Sullivan  
Lt. (jg) Rose A. Yonker  
Lt. (jg) Genevieve E. Repper  
Lt. (jg) Barbara L. Berry  
Lt. (jg) Burnelle P. Nachajka  
Lt. (jg) Catherine E. Welsh  
Lt. (jg) Anna M. Emert  
Lt. (jg) Edna A. Hobbie  
Lt. (jg) Elizabeth M. Ross  
Lt. (jg) Mary E. Matthews

#### Reserve Nurse Corps

Lt. Virginia B. Vaughn  
Lt. Ruth M. West  
Lt. Mary E. Robinson  
Lt. Roehina N. Adinolfi  
Lt. Kathryn T. Gaughen  
Lt. (jg) Mary E. MacDonald  
Lt. (jg) Marie E. Fellin  
Lt. (jg) Fern G. Miller  
Lt. (jg) Thelma J. Falna  
Lt. (jg) Bertha Smith  
Lt. (jg) Sara Beamesderfer  
Lt. (jg) Marjorie R. Fayard  
Lt. (jg) Betty J. Holmes  
Lt. (jg) Neil E. Holmes  
Lt. (jg) Gladys R. Komenda  
Lt. (jg) Celeste C. Garrett

The nine months' course is under the direction of Miss Frances Kirkpatrick, Professor of Home Economics, and gives thirty-two (32) college credits. While attending this course, nurses may qualify for other university subjects of their own choosing as their schedule permits.

### Enlistment Policy Amended

Enlistment directly into the Regular Army is now authorized of male citizens of the United States, aged 18 to 35 years, physically and otherwise qualified for general military service. This is an additional authorization covering a class not mentioned in the Regular Army enlistment policy set forth in War Department Circular 249, the complete text of which was published in the 25 Aug. issue of the ARMY AND NAVY JOURNAL.

Regular Army enlistment is also offered to those 35 years of age and over who have had active service in the Army terminated by honorable discharge, providing they have had total active service equal to or exceeding the following:

Age 35 under 36, three months; 36 under 37, one year; 37 under 38, two years; 38 under 39, three years; 39 under 40, four years; 40 and over, five years.

In addition, men honorably discharged under the provisions of Readjustment Regulations 1-1 may be enlisted or reenlisted in the Regular Army as set forth in the above mentioned circular, with the new provision that such discharge was on or after 12 May 1945, and that enlistment or reenlistment is effected prior to 20 Oct. 1945.

## Build Up Army Reserve

More than sixty-five per cent of all army officers currently being separated from active duty are accepting commissions in the Officers' Reserve Corps, it was learned here this week. All officers accepting commissions in the Officers' Reserve will retain their rank attained during the war.

Brig. Gen. E. A. Evans, secretary of the Reserve Officers' Association, pointed out that in addition to commissioned officers a large number of enlisted men have indicated their desire to join the Reserve component. He said that in some Separation centers the number had gone as high as fifteen per cent.

As a means of aiding in the drive to build up the Army Reserve Corps, President Harry S. Truman sent a brief memo to all officers and enlisted men. President Truman said:

"Our country, which you have served so well, needs your continued patriotic support in the Organized Reserve Corps."

"When you leave the service, I am personally interested that, as an enlisted man, you enlist in the Reserves, or that, as an officer you accept a new commission in the Officers' Reserve Corps. In so doing you will contribute to the future security of our country immeasurably."

Joining President Truman, General of the Army George C. Marshall, Chief of Staff, declared in a message to officers and men:

"To better guarantee the performance of this peace, I am convinced that it is necessary to build up a strong citizen army. The world must recognize that we are at all times prepared to defend the peace. Furthermore, we owe it to our country, and to the comrades who have made the great sacrifice, to insure that never again will Americans be drawn into a war unprepared."

"Therefore, I earnestly hope that you will give careful consideration to the importance of enrolling in one of the civilian components of the Army when you are relieved from active duty, that there may be a solid foundation of veterans for the necessary regeneration of the citizen forces."

## Pacific Troop Movements

The evacuation of eight United States Army stations in the Philippines and abandonment of other Pacific islands by American troops at the earliest possible date has been ordered by General of the Army Douglas MacArthur, according to reports from the Pacific.

At the same time it was reported that thirteen United States divisions numbering some 175,000 men will be landed in Japan by the end of September and early October.

With respect to the Philippines it is understood that reserve airfields will be maintained at three points, where the Far East Air Forces will keep only the minimum detachments needed to service aircraft. The three points are:

1. Mindoro, in the Philippines, invaded last 12 Dec. by the 503d Parachute Infantry Regiment.

2. Cebu, in the Philippines, invaded by the American Division 26 March.

3. Biak Island, off Dutch New Guinea, invaded by the United States Forty-first Division 28 May, 1944.

Areas to be evacuated include Morotal Island, Sulu Archipelago in the Philippines, Middleburg Island (Sansapor, Dutch New Guinea), Palawan in the Philippines, Davao and Malanbang on Mindanao Island and Iloilo on Panay.

With respect to the thirteen U. S. Divisions which will land in Japan, the tentative schedule and objectives are:

Seventy-seventh Infantry Division, Otaru, 4 Oct.; Eighty-first Infantry Division, Aomori, 4 Oct.; Twenty-fourth Infantry Division, Kochi, 22 Oct.; Forty-first Infantry Division, Kure and Hiroshima, 3 Oct.; Fortieth Infantry Division, Fusan, 26 Sept.; Ninety-sixth Infantry Division, indefinite.

Fifth Marine Division, Sasebo, 22 Sept., with advance party arriving at Nagasaki, 16 Sept.; Thirty-second Infantry Division, Fukoka, 15 Oct.; Second Marines, Nagasaki, 26 Sept.; Thirty-third Infantry Division, Osaka, 25 Sept.

Ninety-eighth Infantry Division, Kobe and Kyoto, 27 Sept.; Sixth Infantry Division, Osaka or Nagoya, 23 Oct.; Twenty-fifth Infantry Division, Nagoya, 2 Oct.

In addition, the Ninth Corps will arrive in Hokkaido, 26 Sept.; the 158th Regimental Combat Team will reach Yokohama, 21 Oct.; the Tenth Corps, Kure, 3 Oct.; the First Corps, Osaka, 25 Sept., and the Fifth Amphibious Corps, Sasebo, 22 Sept.



## Changes in Army Regulations

The War Department has issued the following Regulations and Changes in Regulations:

AR 35-4595. "Vouchers for Travel of Military Personnel and Their Dependents." Changes 3 issued 10 Sept. Supersede Changes 2, 28 July 1945. Only Change now in force.

AR 210-10. "Administration." Changes 16 issued 8 Sept. Supersede par. I, section III, WD Circ 134, 1944; par. 2, section III, WD Circ. 439, 1944; section II, WD Circ. 95, 1945, and section I, WD Circ. 179, 1945. Changes now in force 1 to 16, except Changes 2 which has been superseded.

AR 600-37. "Prescribed Service Uniform—Women Personnel of the Army." Changes 2 issued 7 Sept. Supersede Change 1, 10 May 1945, and section II, WD Circ. 208, 1945.

AR 615-300. "Enlisted Men; Discharge; Release from Active Duty." Changes 6 issued 11 Sept. Supersede Changes 5, 25 May 1945. Changes now in force: 4 and 6.

AR 850-20. "Precautions in Handling Gasoline." Changes 3 issued 10 Sept. Changes now in force: 2 and 3.

AR 850-100. "Promotion of Rifle Practice." Changes 1 issued 8 Sept.

## Gen. Groves Awarded D.S.M.

Maj. Gen. Leslie R. Groves, officer in charge of the atomic bomb project, was presented the Distinguished Service Medal by Secretary Stimson, in a ceremony held in Mr. Stimson's office in The Pentagon, 12 Sept.

The ceremony was attended by high-ranking Army officers, headed by Gen. Thomas T. Handy, Deputy Chief of Staff; Dr. James B. Conant, President of Harvard University; and by General Groves' wife, son, and daughter, Mrs. Grace W. Groves, Lt. Richard F. Groves, and Miss Gwen Groves.

The Secretary of War congratulated General Groves on his accomplishments, and said that it was a very rare occasion when the work of a single officer has so much to do with the ending of a war.

## Price Adjustment Board

Appointments of Lt. Col. John S. Sensenbrenner and Mr. George H. Knutson as members of the War Department Price Adjustment Board were announced by the War Department this week.

Lt. Col. Sensenbrenner, a veteran of World War I, Field Artillery, has served three years in World War II, part of which was with Supreme Headquarters, Allied Expeditionary Force in the European Theater of Operations. Before volunteering his services for World War II Lt. Col. Sensenbrenner was vice president of Kimberly-Clark Corporation of Neenah, Wis., and a director of numerous industrial companies.

## Luxemburg

The Finest Cap in the Army



Perfect fit assured—if you send your correct hat size. Mail orders shipped promptly on receipt of check or money order or at your P.X.

The famous Luxemburg Cap is worn by ranking Army Officers all over the world. Hand-made of finest felt, with hand-sewn straps and visor of Calfskin. "Lux-Roll-Edge" which assures perfect lines always.

No finer 'Cap at any price! Luxemburg make their own hand-finished, individual and distinctive insignia for Officers—in Sterling, Gold-filled and Gold.

**Luxemburg**  
Military & Civilian Tailors

485 Madison Ave., New York 22, N. Y.

## UNITED STATES ARMY

## Surplus Army Installations

The War Department this week announced a list of 17 military installations which have become surplus to its needs and which will soon be turned over to the Surplus Property Board for assignment to disposal agencies. These properties are located in 12 states and include five large camps, each more than 14,000 acres in size.

This first large declaration of surplus installations since the end of the war will return to the public more than 178,000 acres of the 6,300,000 acres purchased and 6,200,000 acres leased by the War Department since 1 July, 1940.

The surplus installations follow:  
Fort Brady, Sault Ste. Marie, Mich.  
Camp Callan, San Diego, Calif.  
Fort DuPont, Delaware City, Dela.  
Camp Ellis, Table Grove, Ill.  
Camp Fannin, (except cantonment area), Tyler, Tex.  
Horn Island, Miss.  
Camp McCain, Grenada, Miss.  
Camp Millard, Bucyrus, Ohio.  
Mississippi Ordnance Plant (exclusive of industrial facilities), Flora, Miss.  
Fort Niagara, Youngstown, N. Y.  
Philadelphia Port of Embarkation (exclusive of ammunition loading pier at Hog Island), Philadelphia, Pa.  
Camp River Rouge, Detroit, Mich.  
Camp Thomas A. Scott, Fort Wayne, Ind.  
Camp Skokie, Glenview, Ill.  
Camp Sutton, Monroe, N. C.  
Camp Van Dorn, Centerville, Miss.  
Camp Wheeler, Franklinton, Ga.

## Optometry Corps Bill Passes

To establish an Optometry Corps in the Medical Department of the Army, the House this week passed H. R. 3755. To be eligible for commissioning as an officer, a candidate must be a graduate of an optometry college or school approved by the Council on Education and Professional Guidance of the American Optometric Association, and must have been a practitioner for at least two years after graduation.

Officers in the Corps will be assigned to optometrical duty or to administrative duty connected therewith. When doing optometrical duty they will be under the orders of a medical officer who is an ophthalmologist. The Corps would be limited to 60 officers in grades from second lieutenant to colonel, inclusive.

## AAF Radio Broadcasts Cut

Army Air Forces official network radio broadcasts and radio personnel will be cut in half by the end of September by General of the Army H. H. Arnold, Commanding General of the AAF.

At the same time a peace-time schedule of six national broadcasts weekly will be maintained to keep the public fully informed of developments in the post-war Air Force, AAF redeployment and demobilization, manpower needs and opportunities, achievements in aeronautical research, activities of the occupational air forces in Europe and Japan, surplus property disposal, and objectives of national security.

The AAF Radio Production Unit in Los Angeles, Calif., will be inactivated 30 Sept. All actual broadcasting will be handled after 1 Oct. by the AAF Radio Production Unit in New York City, under supervision of the Headquarters AAF Office of Radio Production in Washington.

## Praises Signal Corps

Under date of 15 August, Under Secretary of War Robert P. Patterson wrote Maj. Gen. H. C. Ingles, Chief Signal Officer, the following letter:

"It must be as pleasing for you as it is for me, now that the war is over, to think how the great improvements in communications brought about during the stress of battle can at last be put to peacetime use.

"But for the great strides made in Signal Corps equipment, particularly in radar, the war would certainly not be concluded at this early date.

"I have some knowledge of the difficult problems you and your staff have solved. I am acquainted, as I wish the whole country were better acquainted, with the magnitude of your achievement.

"Please allow me at this time to say thank-you for your magnificent contribution to the victory of our nation and our Allies."

General Ingles circulated the letter to all Signal Corps personnel, military and civilian, with the following indorsement:

"The above letter is addressed to me merely as a representative of the Signal Corps. The magnificent job which the Signal Corps has done in this war has been accomplished only by the continuous and unrelenting efforts of the splendid Signal Corps men and women, both military and civilian, all over the world.

"Your untiring work, initiative, unselfishness and cooperative spirit has furnished a pattern of service that will be an inspiration in the Army for many years to come.

"I want to add my personal thanks to Judge Patterson's to all of you."

## Temp. Promotions of Regulars

Lt. Col. to Col.	J. E. James, jr., QMC
W. W. Aring, AC	J. W. Lockett, Inf.
F. P. Carpenter, jr., FA	C. H. Prunty, Cav.
C. B. Duff, GSC	
Maj. to Lt. Col.	
H. D. Ballett, Inf.	E. E. Hallinger, CAC
J. W. Dobson, Cav.	W. R. Reilly, Inf.
C. W. Florence, jr., QMC	J. S. Shapland, CE

Capt. to Maj.	L. W. Hough, jr., AC
K. R. Brown, Inf.	J. L. Riley, jr., Inf.
R. H. Dettre, jr., AC	
1st Lt. to Capt.	
Victor Arnold Franklin, Inf.	

## Sees Training Need

John J. McCloy, Assistant Secretary of War, this week declared that the atomic bomb has not removed the need for Universal Military training.

Speaking before the Boston Chamber of Commerce, Mr. McCloy stated that the principles of the new bomb and the possibility that these principles may become available to our enemies, will present a new threat to our national security.

"To meet this threat," he said, "new and highly technical training and planning obviously will be necessary. The need for specialization has become greater than ever before."

## Undeveloped Film

Undeveloped film sent by all service personnel overseas to the United States should be wrapped in a separate package and distinctly marked "Undeveloped Film" on the outside wrapper, Maj. Gen. Archer L. Lerch, The Provost Marshal General, warned this week. Packages shipped from overseas are examined by an inspector, an X-Ray-like machine, used to detect the shipment of stolen Government property. This machine ruins undeveloped film.

## BUY VICTORY BONDS!



ARMY OFFICERS'

## ★ BATTLE DRESS JACKETS ★

(Fully Lined!!!)

ALL SIZES 36 to 44 • SHORTS, REGULARS LONGS

● Beautifully tailored from 100% Wool Finest Quality Elastiques Samples on request.

● Excellent stock now available—Fine quality Gabardine Trench Coats at \$41.50 and \$54.50 . . . also genuine 80 oz. Beaver Short Overcoats at \$49.50.

**\$40. • \$44.25**

Send Following Measurements  
HEIGHT .....  
WEIGHT .....  
SIZE .....  
(Standard Size of Uniforms which you are now wearing)

## ★ ROSENFELD ★

UNIFORM COMPANY

★ SINCE 1902 ★

15 SCHOOL ST. • BOSTON 8, MASS.  
Leading Military Outfitters in New England!

## Overseas Xmas Packages

Overseas Christmas mailing rules have been announced by the War Department, as a means of assuring that gifts to service men abroad will receive their packages in the shortest possible time.

According to the Department's instructions gifts must be mailed between September 15 and October 15. It is pointed out that this is the only time you can mail a parcel overseas to an army person without written request from him or her. The Department also warns that packages must not be mailed if the recipient is on the way back to this country or is likely to be coming before Christmas.

It is stated that if there is any reason to believe that the recipient may move to a new location soon, it is necessary to wait until the new address is given.

The latest address must be used completely and accurately.

The gift must be packed in a heavy box and tied with strong cord. Such packages must weigh not more than 5 pounds, and measure not more than 15 inches long, or a total of 36 inches in length and girth combined.

It is further suggested that only usable gifts be selected, such as dried fruit, canned luxury foods, razor blades, fountain pens, wallets or watches. No perishable foods, intoxicants, weapons, poisons or any inflammable materials, including matches and lighter fluids, must be sent.

## Women's Recreation Center

Army Hdqs., MidPac, Ft. Shafter, T. H.—Women Army officers in the Middle Pacific now have their own recreation center, on the Cooke Estate, Laie, on Oahu, T. H.

Located on one of the finest swimming beaches on the island, the new center, first of its kind for women officers, is completely equipped to provide Army nurses and WAC officers an enjoyable respite from military duties. The house has been remodeled to provide accommodations for as many as 20 officers on leave or overnight pass.

Brig. Gen. John M. Willis, MidPac Surgeon General, gave the formal dedicatory address in the absence of Lt. Gen. Robert C. Richardson, jr., MidPac Army commander who was in Tokyo. Brig. Gen. Roy E. Blount, commanding Army Port and Service Command, accepted the installation. The center will be operated by APSC's Morale Division, commanded by Lt. Col. Amos W. Flemings.

## Commended for Flood Work

Puerto Rico—Lt. James R. Bostick, has been publicly commended by the City of Salinas, P. R., for directing the Army's assistance last month during the Salinas River flood when much of the city was inundated.

At a ceremony in the Salinas City Hall this week, Mayor Francisco Sanchez presented Lieutenant Bostick a copy of a resolution of gratitude passed by the Municipal Assembly. Other copies of the resolution were forwarded to Lieutenant Bostick's superior officers, including Maj. Gen. William M. Grimes, Commanding General of the Antilles Department.

## Col. Hartman to Air Group

Lt. Col. Phillip Hartman, recently released from the Army Air Forces, has been appointed manager of the New York office of the Aircraft Industries Association. Colonel Hartman entered the Army via the Infantry School in 1940 and was assigned to the Air Corps in the same year. He saw service in Procurement, Materiel, Industrial Labor and Manpower branches of the AAF.

THE ARMY AND NAVY CLUB  
of San Francisco  
560 SUTTER STREET  
(Incorporated 1924)

Headquarters for all Commissioned Officers of the Armed Services. Inspection Invited.

# CHRISTENSON

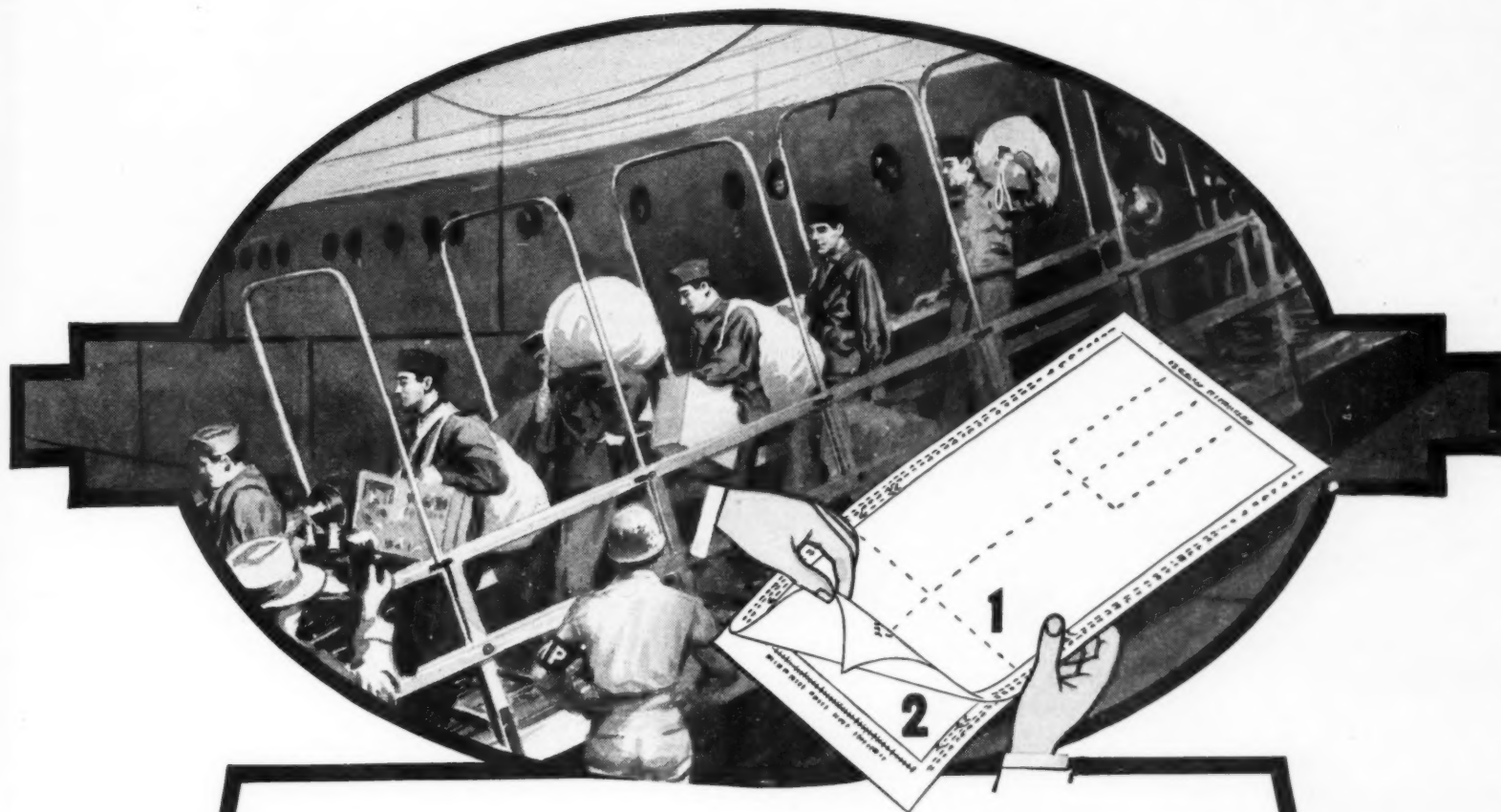
## Military Tailors

UNIFORM AND ACCESSORIES

Matching Shirts & Trousers

286 FIFTH AVE., NEW YORK 1





## Mimeograph Dual Stencils help bring them home

*Mimeograph\* duplication turns out the paper work for the greatest mass movement in history.*

As you well know, every soldier that moves, moves on written orders. Take some millions of men, and start them moving, and you have paper work that for sheer bulk dazes the imagination.

The problem of getting our troops back from overseas without delay and confusion, had to have an answer. It was found in the use of Mimeograph stencil duplication and the new Mimeograph Dual stencil.

Instead of shipping vast amounts of paper and supplies overseas for producing the needed numbers of movement orders, these orders are now prepared overseas using Mimeograph Dual stencil sheets. In one typing operation on the Mimeograph Dual stencil sheet, two separate masters are produced.

Once prepared, the identical stencils go their separate ways. Primarily, the first stencil is used for advance information and planning purposes. It precedes the personnel by air courier to both Staging Area and Reception Center in the United States.

The other travels with the troops, and to it is added both the port endorsement and staging area endorsement. From

both these stencils, which can be re-used, the necessary number of copies can be produced when and where they are needed.

This means an enormous savings in clerical personnel. What used to take one day to do, now takes about forty-five minutes.

It speeds the movement of troops because it permits advance planning for their reception and disposition.

It eases the shipping problem. Vast quantities of paper and supplies no longer need to be sent overseas.

Unit and group leaders who formerly might have been responsible for a mailbag of documents, now need to carry only one manila envelope.

★ ★ ★

This is but one instance of how Mimeograph duplication has helped solve wartime paper work problems for the Army and the Navy. Whether your problem is an entire paper work procedure or a mere reproduction of ten to a thousand copies of a letter or bulletin, the Mimeograph duplicator and Mimeograph supplies should provide you with the desired results.

A. B. DICK COMPANY  
720 W. Jackson Blvd.  
Chicago 6, Ill.



## Mimeograph duplicator

\*MIMEOGRAPH is the trade-mark of A. B. Dick Company, Chicago, registered in the U. S. Pat. Off.

COPYRIGHT, A. B. DICK COMPANY



## Ships for Navy Day

Americans next month will see many units of the fleet which hastened victory for the Allies. These ships, including the USS Missouri—scene of the surrender ceremony—will be deployed in Atlantic and Pacific ports for Navy Day, 27 Oct.

The tentative deployment schedule, which will be amplified later as plans are completed for the location of ships at specific ports, is as follows:

U. S. Atlantic Ports—the battleships Missouri, North Carolina, Washington, New Mexico, Mississippi, New York and Idaho; the aircraft carriers Randolph, Wasp, Enterprise, Ranger, Monterey, Bataan and Langley; the cruisers Boise, Richmond and Concord; the destroyers Charles Ausburne, Anlick, Claxton, Dyson, Braine, Converse, Foote, Young, John Rodgers, Harrison, McKee, Murray, Kimberly Ringgold, Schroeder, Sigsbee and Dashiell.

U. S. Pacific Ports—the battleships South Dakota, Wisconsin, Indiana, Alabama, Iowa, West Virginia, Colorado, Maryland, Arkansas and Texas; the aircraft carriers Ticonderoga, Hornet, Saratoga and Bunker Hill; the cruisers Baltimore, Pittsburgh, Amsterdam, Vicksburg and Tucson; the destroyers Mansfield, DeHaven, Lyman K. Swenson, Collett, Maddox, Blue, Brush, Taussig and Samuel N. Moore.

## USS Houston Command

Capt. William H. Behrens, USN, has been relieved as commander of USS Houston by Capt. Howard W. Orem, USN. Captain Behrens is now on temporary duty with Bureau of Naval Personnel in Washington, pending his assignment soon as commanding officer of the United States Naval Training Center, Bainbridge, Md., with the rank of Commodore.

Comdr. George N. Miller, USN, has assumed duties as Executive Office of the Houston.

## Navy Supply Corps

Reserve and temporary officers of the Line as well as Staff Corps may submit application for appointment to Supply Corps, U. S. Navy, the Navy Department announced this week.

Officers with appropriate backgrounds for Supply Corps by reason of college training, Navy experience or civilian occupation are eligible. Such officers will receive adequate training for Supply Corps duties.

THE SYMBOL OF  
DISTINCTIVE  
UNIFORM TAILORING

Behind the Kassan-Stein label are years of tailoring experience... years of creating the finest of uniforms for Army, Navy and Marine Corps. The label is assurance to the officer that he has received the superlative in uniform custom tailoring.

**Kassan-Stein**

Uniform Custom Tailors  
510 ELEVENTH STREET  
WASHINGTON, D. C.

## U. S. NAVY &amp; MARINE CORPS

## Underwater Protective Systems

Construction of strong, water-tight compartments and more extensive building of underwater protective systems saved many United States ships from sinking after they had been struck by the enemy in World War II, the Navy Department pointed out this week.

The cruiser USS New Orleans, with 150 feet of her bow missing, (one-fourth of her length), steamed thousands of miles under her own power to the West Coast for repairs.

The new battleship USS North Carolina actually increased her speed from 19 to 25 knots after being hit by a submarine torpedo in the summer of 1942.

Even smaller warships displayed this same ruggedness as a result of the improved construction. The 1,850-ton destroyer USS Selfridge steamed back to port at ten knots after being struck by two torpedoes and losing the forward third of her hull.

Survival of the big carriers USS Franklin, USS Enterprise, USS Intrepid and USS Bunker Hill and the new cruisers USS Houston and USS Canberra to the changed plan of ship-construction which began evolving immediately after World War I.

The ability to survive heavy damage was brought about largely by the best distribution of weight available for protective purposes, including the armor of larger warships.

Warship developments in recent years included a higher degree of subdivision by increasing the number of water-tight compartments, the extension of water-tight bulkheads to the upper decks, improved types of water-tight doors and hatches and improved closure devices for isolating damaged areas.

The newest battleships and aircraft carriers, for example, have nearly 1,000 water-tight compartments, while the newest destroyers have about 100.

## Navy Enlistment

Enlisted reservists and inductees may transfer immediately to the Regular Navy in approximately 40 different ratings, the Navy Department announced this week.

The Navy said that those in the Regular Navy whose enlistments have expired but have been involuntarily extended as a result of the war may likewise re-enlist. Civilians within the age group of 17 to 30 years, inclusive, may enlist through Navy Recruiting Stations throughout the country.

## Navy Supply Corps

Reserve and temporary officers of the line as well as staff corps may submit application for appointment to Supply Corps, U. S. Navy, it was announced this week.

Officers with appropriate backgrounds for Supply Corps by reason of college training, Navy experience, or civilian occupation are eligible.

## Radio Technicians Training

The radio technicians and aviation radio technicians training program for Navy enlisted personnel has been returned to the status under which it operated prior to 15 Aug.

All men engaged in this training program, including those at recruit training centers, will complete an accelerated course whether they are Regular Navy, Naval Reserve, or inductees. Under the new directive, persons in this program may transfer to general service at their own request.

Students who voluntarily enlisted in the Regular Navy since 22 Aug. to continue their radio technician training may remain in the Regular Navy, or may revert to their former status.

The radio technician and aviation radio technician training program has been returned to its former status in order to avoid discharge of enlisted personnel outside the demobilization point formula. Men in the program will be released under the Navy's demobilization plan when they accumulate enough points to qualify in the same manner as other ratings in the service. Men not eligible for demobilization upon completion of training will be assigned in their specialty as the needs of the service require.

Approximately 25,000 enlisted personnel will be affected by this directive.

## Personnel Now in Training

Decision on the disposition of personnel now engaged in certain Navy training programs, including the larger officer training programs, has been made by the Navy Department.

Trainees in Naval Reserve Officers Training Corps scheduled to graduate in the term ending 1 Nov. will be retained on active duty after commissioning unless they are eligible for release on points under the demobilization formula.

Transfers to the NROTC program from V-12 will increase the number in NROTC to approximately 19,000 by 1 Nov. Final disposition of other groups now enrolled in the NROTC or scheduled to be so enrolled will be determined at a later date.

Engineers, physics majors, aerology majors and pre-supply candidates will complete their training in V-12 and will be retained on active duty. They will be commissioned as officers upon the completion of their V-12 courses, or upon the completion of further training, to be subsequently determined.

Medical, dental, theological, pre-medical, pre-dental and pre-theological students will be released to inactive duty in the Naval Reserve, with the stipulation that they continue their medical, dental, theological, pre-medical, pre-dental or pre-theological training.

In the midshipman training program, carried on through the Naval Reserve Midshipmen's Schools, all graduates prior to 1 Sept. and since that date have been called to active duty. Those graduating

in the future will be retained on active duty as officers.

Aviation cadets in training under the V-5 program will be released, without restriction as to number, to inactive duty if they do not wish to continue their training. Aviators are in excess and are being released under reduced critical scores in the Navy demobilization plan. The length of time (18 months), the expense and the hazards in training aviation cadets were other factors in this decision.

## USMC Nominations

The following nominations were sent to the Senate 18 Sept.:

Francis P. Dayton, a warrant officer of the Marine Corps, to be a captain from 9 June 1945.

The below-named citizens to be second lieutenants in the Marine Corps:

Walter S. Metzger, Arnold B. Capps, William H. Rankin.

## Naval Uniforms

In the future the style and design of the chief petty officer's blue coat will be identical with the style and design of commissioned and warrant officer's blue service coat, the Navy Department said this week.

At the same time the Department stated that chief petty officers would wear overcoats of a similar design as those worn by commissioned officers.

Although the Navy's order becomes effective immediately, it was pointed out that personnel who may be affected are authorized to wear the old-type uniform until they no longer become serviceable.

## Hurricane Hunters

Inaugurated early in the war when flying toward hurricanes was considered little short of suicide, the Navy Department this week revealed that its airmen who fly out into storm areas, had circled the hurricane which struck Florida coast last week.

These "hurricane hunters," who literally seek out storms and accompany them for tracking purposes, were developed by both Army and Navy Airmen and aerologists in a joint operation, working in conjunction with the U. S. Weather Bureau.

The project was directed by Capt. Howard T. Orville, USN, Head of the Naval Aerology Flight Division, Office of the Deputy Chief of Naval Operations for Air. Navy fliers last year successfully tracked 11 hurricanes. Fleet Air Wings 11 and 12 were performing these duties.

The recent hurricane activity in the Atlantic was in the hands of VPB 114. An aerological officer goes on each flight.

VPB 114 is commanded by Lt. Comdr. Gorden W. Smith, USN. The executive officer is Lt. Comdr. Elbert V. Cain, Jr., USNR. The flight officer is Lt. Comdr. John W. McCort, USNR. Operations officer is Lt. Robert J. Walsh, USNR. Lt. John A. Murch, USNR, is the squadron's engineering officer.

Aerological officers attached to the squadron are: Lt. Comdr. Norman S. Haber, USNR, Lt. Comdr. Earl G. O'Dell, USNR, Lt. John W. Sparkman, USN, Lt. (jg) Theodore F. Lindeman, USN.

Be Wise - - ORDER YOUR  
MAGAZINE SUBSCRIPTIONS  
At Special MILITARY RATESFor MEN IN THE SERVICE  
For MILITARY UNITS

Subscriptions can be sent to your home or military address.

Special Military Rates, U. S. & Overseas (one year)

..American .....	\$2.00	..Downbeat .....	3.00	..Life .....	3.50
..Army Times .....	2.00	..Esquire .....	\$3.50	..Life (2 yrs.) .....	6.00
..Architectural Forum .....	2.00	..Forbes .....	2.00	..Magazine Digest .....	\$2.00
..Army & Navy Journal .....	5.00	..Fortune .....	6.00	..Newsweek .....	3.50
..A. & N. Jnl. to units .....	7.00	..Fortune (2 yrs.) .....	11.00	..Readers Digest .....	1.50
..Atlantic Monthly .....	3.50	..Ladies Home Journal .....	1.50	..Red Book .....	2.00
..Blue Book .....	2.00	..Liberty .....	1.75	..Sat. Eve. Post .....	2.00
..Colliers .....	2.00	..Look .....	2.50	..Time .....	3.50
..Coronet .....	1.50				

We guarantee to forward magazines anywhere when change of station is made. Check magazines desired, send remittance with this ad (or use separate sheet).

**SHEPARD W. DAVIS & CO.**

Authorized Representatives

30 BAY STREET, Military Dept.

STATEN ISLAND 1, N. Y.

Catalog containing civilian rates as well as military rates sent upon request.

DEPENDABLE  
POWER

Aboard many ships of the U. S. Navy, Coast Guard and Maritime Commission, electric power for a host of vital installations is supplied by Electro Dynamic motors and generators.

## ELECTRIC BOAT COMPANY

33 Pine Street, New York 5, N. Y.

Submarines

NEW LONDON SHIP AND ENGINE WORKS  
Groton, Conn.

Electric Motors  
ELECTRO DYNAMIC WORKS  
Bayonne, New Jersey

Motor Torpedo Boat  
ELCO NAVAL DIVISION  
Bayonne, New Jersey





## Sec. Patterson on Radio

Declaring that the Army was anxious to return its men and women to their homes, Secretary of War Patterson, at the same time warned that America must not jeopardize the future peace of the world or the safety and well-being of our occupational forces.

Speaking before a nation-wide radio audience, Secretary Patterson said that the program to reduce our strength from over eight million down to two and a half million by next July is a tremendous task. It depends he said, upon our ability to move these troops from overseas theaters, house them, transport them within the United States, and complete their processing for separation.

"If we are to bring them back speedily and at the same time insure our hard-won peace, by performing America's share in the occupation and disarmament of the powerful aggressors that we have defeated," the Secretary said, "It is obvious that many of those men and women must be replaced by new, fresh troops who have not yet served abroad."

## D.S.M. to War Department Aides

By direction of the President, the Secretary of War 18 Sept. presented the Distinguished Service Medal to Under Secretary of War Patterson, Assistant Secretary of War McCloy, Assistant Secretary of War for Air Lovett and Special Assistant Bundy.

The awards were for their services as top War Department aides during the war. Present were Secretary of the Navy Forrestal, General of the Army George C. Marshall and many other high ranking officers and members of the recipients' families.

## Seventeen-year-olds

The Navy Department this week declared that seventeen-year-olds would be eligible for minority enlistment only.

Prior to effecting enlistment parental consent must be again obtained in each case. Attention was also called to the fact that men reaching eighteen in the interim were no longer eligible for minority enlistment but are subject to full four year enlistment.

## Retires After 51 Years

Maj. William Hayes, of the Army War College historical section in Washington, D. C., will retire effective at the end of the year in his permanent rank of chief warrant officer after a record total of 51 years and nine months of active service. He started on his terminal leave 17 Sept.

Major Hayes, who is 66, enlisted in March, 1894, at Fort Bliss, Texas, at the age of 14 years. He admits that with the consent of his parents he fudged a couple of years on his age to enlist, as the army at that time would accept 16-year-olds for duty as fifers, drummers and buglers. It was not until 1941 that his true age was entered on his Army records.

The son of Thomas Hayes, a soldier in the 16th Infantry band, he was born on the Army post at Fort Riley, Kansas.

During the Spanish-American war he took part in the battle of Manila, and then in four battles against the Insurgents during the Philippine Insurrection. Shortly after the Spanish-American war, Major Hayes transferred to Field Artillery, the arm with which he has served ever since.

During the World War, he was commissioned a first lieutenant with the 107th Field Artillery Regiment of the 28th Division and went with it to France. Just as his outfit reached the battle line, however, he was recalled to the United States, promoted to captain and assigned to the 47th Field Artillery of the 16th Division.

After the war he reverted to his rank of warrant officer. Recalled to duty on the reserve officer commission he had held

## Army and Navy Journal

127

September 22, 1945

since World War days, he came to the Army War College in 1941 as a captain, and subsequently was promoted to major.

Major Hayes and his wife make their home at 120 19th Street, Southeast, in Washington. Their son, William I. Hayes, a member of the Washington park police, lives at 113 19th street, Southeast. Their daughter, Mrs. Stanley E. Jordan, wife of Col. Stanley E. Jordan, USA-Ret., lives in St. Petersburg, Fla.

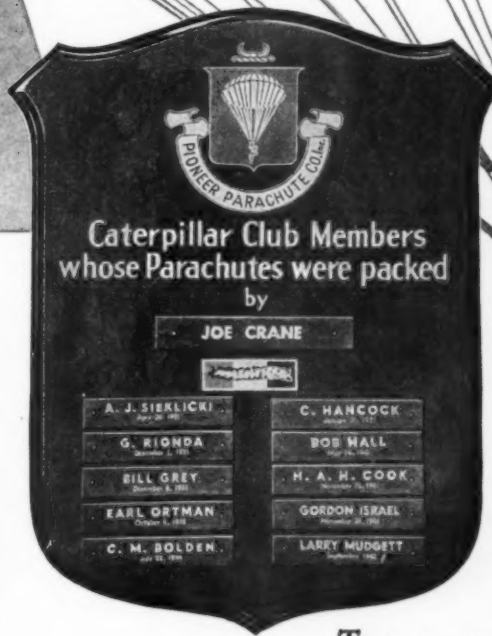
## On European Forces' Staff

U. S. Forces, European Theater — Appointment of Maj. Jean Cattier as executive officer of the Financial Branch, G-5, Hq. USFET, was announced here.

# Pioneer Parachute Company

## Salutes the Riggers

### For Their Continuous Devotion To Duty



IN behalf of the hundreds of people of Pioneer Parachute Company and the thousands of men who have had to 'chute to safety either in the performance of their duty or to save their lives, Pioneer Parachute Company takes this means of publicly saying to the parachute technicians (riggers)... "Thanks for doing an excellent job!" Pioneer Parachutes are designed, engineered and manufactured to be fool-proof and foul-proof — and it is the riggers who keep them that way! Yes, these unsung heroes are as vitally important to the proper servicing of the 'chutes as the aviation mechanic is to the proper servicing of the airplane engine. The riggers, constantly maintaining the standards of Pioneer Parachute Company, are responsible for their continuous, positive performance — the lifeline to every flier. We are proud to salute them!

THIS handsome, walnut plaque is presented to the Riggers who packed the 'chutes used in life saving jumps. The name of the Rigger as well as the names of the Caterpillars are stamped in gold. The plaque is designed to hang in the Rigger's loft as an emblem honoring his craft. Write to Pioneer Parachute Company for further data.

PIONEER PARACHUTES are now available without priorities. NYLON harnesses are now made standard equipment on Models PIB, P3B, ANSS 24, and QAC types at no extra cost.

## PIONEER PARACHUTE COMPANY, INC.

MANCHESTER, CONNECTICUT, U. S. A.

CABLE ADDRESS: PIFAR.

TELEPHONE: Manchester 4157

WEST COAST FACTORY BRANCH, 109 SOUTH CENTRAL AVENUE, GLENDALE 4, CALIFORNIA

## Safe Way to Carry Furlough Funds



IT'S RISKY to carry cash on your person. Put your funds in American Express Travelers Cheques, instead, and you're safe. You sign your name on your cheques when you buy them—then sign again when you spend them. That's your identification. If any are lost or stolen, you receive a prompt refund for the full amount of the loss.

These cheques are known the world over. You can spend them in railroad stations, stores, restaurants — everywhere. Sold in denominations of \$10, \$20, \$50 and \$100, at a cost of only 75¢ per \$100 (minimum 40¢) . . . at Banks, Railway Express Offices, and at many camps and bases.

**American Express**  
TRAVELERS CHEQUES



# ARMY AND NAVY JOURNAL

Subscription rates—To individual members of the Services and their families: One year, \$5.00; two years, \$9.00; six months, \$3.00. To civilians and organizations: One year, \$7.00; two years, \$12.00; six months, \$4.00.

Foreign postage \$1 additional per year  
Advertising Rates on Request  
Member of the Audit Bureau of Circulation

Published Every Saturday by the  
Army and Navy Journal, Inc.

1701 Connecticut Avenue Northwest  
Washington 9, D. C.

JOHN CALLAN O'LAUGHLIN,  
President and Publisher

LEROY WHITMAN,  
Editor

Representatives:  
Ernest W. Mandeville  
Room 1307, 32 Broadway, New York City  
Whitehall 4-7245  
Hil F. Best  
131 W. Lafayette St., Detroit 26, Mich.  
RA 7298; and  
Room 1715, 360 N. Michigan Avenue, Chicago  
1, Illinois  
Rm. 310 Citizens Bldg., Cleveland, Ohio  
Ch. 4030

"Established in obedience to an insistent demand for an official organ for members of the American Defense and those concerned with it, The Army and Navy Journal will be published in the interest of no party; it will be controlled by no clique. Its independence will be absolute. Its interest will be directed solely to the inculcation of sound military ideas and to the elevation of the public service in all its departments."—From Vol. 1, No. 1, of the Army and Navy Journal, published August 29, 1863.

SATURDAY, SEPTEMBER 22, 1945

## OUR PRIORITY LIST

1. Maintenance in accordance with professional studies of our national needs and international commitments, of Regular Establishments organized and trained to utilize and employ material of war developed by continuing Scientific research, and backed by Industry and Labor kept intimately familiar with the manufacture of such materials.
2. Reconstruction of National Guard and Reserve components federally aided and encouraged to maximum efficiency, and effectively coordinated with the Regular Services, and universal military training.
3. Increase in active and retired pay and allowances to meet rising costs so as to enable maintenance of American standards of living, and protection of such pay from reduction through income taxes.
4. Institution of orderly promotion systems in the Regular Establishments with recognition of war service and war ranks, to prevent future stagnation, and to insure the maintenance of high professional standards.
5. Continuance and expansion of service schools, including the Army and Navy Staff College, attendance of which shall be open to National Guard and Reserve officers.
6. Suitable rank and retirement benefits for former enlisted personnel who served as commissioned officers during the war.
7. Grant of the same rights and benefits to those who elect to remain in the Services as will be enjoyed by the discharged veterans.
8. Upward revision of pension scales to assure Service widows and dependents a living income.
9. Compensation for Service personnel who use privately owned automobiles on government business.
10. Maintenance of stock piles of strategic materials.

THE ARMY AND NAVY JOURNAL presents above its post-war "Priority List" toward which our editorial policy will be directed in the critical period that lies ahead. To provide for our national needs, to implement our international commitments, and taking to heart the lesson that unpreparedness means peril for our security, we may expect the Congress to provide and maintain adequate armed forces, funds for the continuation of scientific research, and to grant small orders to industry so that the art of manufacturing war materials shall be kept alive and the tools and trained labor with which to do it will be constantly available. The restoration and strengthening of the National Guard and Reserves, whose values were so well shown in this war, must be brought about. The fine system of education in the arts of war, including the Army and Navy Staff College, which has contributed so greatly to interservice knowledge and cohesion, must be kept going and attendance upon their classes provided for outstanding National Guard and Reserve members. For the welfare of Service personnel, and thus for the efficiency of the Forces, increases in active and retired pay must be forthcoming. New promotion systems, fair to the individual and conducive to efficiency, must be developed and enacted promptly. Steps must be taken to improve the outlook of those former enlisted men who have served ably as commissioned officers during the war.

To the realization of these ends the ARMY AND NAVY JOURNAL will devote its best efforts.

ALTHOUGH he is of Supreme Court caliber, and, therefore eminently fitted for the vacancy that existed on that High Tribunal, the Nation and the Army find in Judge Patterson's succession to Mr. Stimson as Secretary of War, confirmation by the President of the military and procurement policies of the War Department, and of the assurance that post-war demobilization and planning for our future defense will be ably handled. Because of his advanced years, 78 yesterday, Mr. Stimson naturally was impelled to devote himself to the development and approval of fundamental policies and to limit the attention he could give to the multitudinous and complex questions of Army Administration. Events have demonstrated that his judgment and advice, based upon lengthy experience in state and military affairs, were in preponderating measure, sound. Moreover, he had the benefit of the loyal support and advice of assistants of exceptional capacity, Mr. Patterson, Mr. McCloy, Mr. Lovett, and General Marshall, and the close cooperation of Mr. Hull when Secretary of State, and Secretary Forrestal, who, fortunately, will remain as the head of the Navy Department. Mr. Stimson leaves Government service with the knowledge that achieved were the crowning ambitions of his life, the destruction of the totalitarian system of Germany, and to that end, pre-war cooperation and then war coordination with Great Britain, and the punishment and annihilation of Japan, which he sought ineffectually to restrain from seizing Manchuria when he filled the office of Secretary of State in the Hoover Administration. To his everlasting credit will be his reliance upon the Chief of Staff, and his wholehearted support of that officer and his proposals which resulted in the creation and strategic distribution and employment of the most powerful Ground and Air forces the United States has ever had, and, indeed, the world has ever seen, and his equal reliance upon Mr. Patterson and officers and officials under his direction, in harnessing industry to our war machine, which insured provision of the latest in armament that ranged to the Atomic Bomb, adequate supplies of all kinds, sufficient transportation for huge movements of troops, and unexcelled service for the care and comfort of the officers and men. In their fields also, Mr. McCloy and Mr. Lovett, the Air assistant, both of whom are to retire, contributed valuably to the winning of the war, and the government and the Army will miss their patriotic devotion and the ability they displayed in matters of vital interest to the Nation. Mr. Stimson, Mr. Patterson and they justly should feel that in the promotion of the Under Secretary, the President has given official sanction to their conduct and actions. This means that certainly the principles of the policies heretofore followed will not be changed, that demobilization, with due regard for the international picture, the protection of our interest, and determination of the needs of our defense, will proceed with the utmost possible rapidity, that sanity will govern the disposal of surplus material and war plants, and continue to apply in solving the delicate questions of labor relations, and, of inestimable importance for our future security, comprehensive establishment of the strength and organization of Ground and Air forces. Because of his judicial temperament, his wise viewpoint, and his experience of five years as Assistant. Under Secretary, and on innumerable occasions, Acting Secretary, the Army confidently expects that Mr. Patterson will discharge his higher duties with the same judgment and efficiency he has displayed before and during the greatest war in history.

## Service Humor

### Fruit Store

Capt.: Why do you have all the big men in the front ranks and all the small ones in the rear?

Lt.: It's the Sergeant's idea, he used to run a fruit store.

—Bowie Blade.

### Small Pay

A private was counting his pay by wetting his fingers and leafing the bills.

"Hey, that money is full of germs," a buddy shouted.

"Nuts," replied the private, "no germ could live on my salary."

—Kearns Post Review.

### Stranger

Guard: Halt! Who goes there?  
Rookie: You wouldn't know me. I just got here.

—Belvoir Castle.

### Self Defense

And then there was the GI from south of the Border who gently took his wife's dainty little hand in his and twisted it until she dropped the knife.

—The Message.

### Repeat

First Rookie: "Last week I had to dig trenches. All this week I'm doing KP. And then I don't get a pass. I feel like punching the top sergeant in the nose again!"

Second Rookie: "Again? !!"

First Rookie: "Yes, I felt like it last week too."

—Fifth Service News.

### No Motive

And then there was the trainman's daughter who was loco without any motive behind it.

—Replacement Center Recorder.

### I. O. Ratio

Instructor: "A fool can ask more questions than a wise man can answer."

GI Student: "No wonder so many of us flunk these exams."

—Armored News.

### Salute the General

First private: Why did you salute the truck driver?

Second private: Don't be so dumb. That's no truck driver, that's General Hauling. Didn't you see the sign?

—Skyscrapers.

### Color Blind

Sgt: "Has anybody seen a tie around here? I lost mine."

Cpl.: "What color was it?"

—The Roger.

### Mistaken Identity

At a military banquet in Hollywood a colonel seated at a table turned to a colonel seated on his right and said, "See that major in that WAC uniform! Why don't those girls stay out of this man's army?"

The colonel gave him a dirty look and said, "Don't you dare criticize my daughter."

"Oh, I beg your pardon, I didn't know you were the girl's father."

"I'm not! I'm her mother!"

—The Welfarer.

### Transportation

"Bought a chicken the other day."

"Pullet?"

"No, carried it."

—Skyscrapers.

## ASK THE JOURNAL

Please send return postage for direct reply.

I.N.S.—There are no provisions for retirement pay for Reserve officers except for disability.

B.F.W.—For information pertaining to the appointment of cadets, inquiries should be sent to the Superintendent, U. S. Coast Guard Academy, New London, Conn.

M.D.L.—It has been claimed that H. R. 725 would only apply to those who served as enlisted men prior to either World War I or II. H. R. 3990 applies to all enlisted men and would permit them to retire in the highest rank or grade in which they served during World War II after 20 years' service. It would also permit all sea duty and foreign service performed during World War II to be counted double toward retirement.

J.A.A.—H. R. 3934 would amend the Mustering-Out Payment Act of 1944 to insure payment of mustering-out pay to all Regular officers below the rank of major or lieutenant commander. Payments would be made when the war is officially declared to be over.

## In The Journal

### One Year Ago

In the Pacific, two United States Fleets landed and covered two simultaneous invasions, in the Palau Islands and at Halmahera, while other naval forces pinned down the Japs with an air bombardment scattered over 3,300 miles and pursued the relentless submarine war.

### 10 Years Ago

Immediately following the news of the election of Manuel Quezon as President of the Commonwealth Government of the Philippine Islands, official announcement was made of the detail of General Douglas MacArthur as Military Adviser to the new government.

### 25 Years Ago

The engagement of Comdr. Thomas Alexander Symington, USN, to Miss Madeline Cloud, of Los Angeles, is announced. The wedding will take place 22 Sept.

### 50 Years Ago

The New York World says "The soldier's lot is hard enough for the \$13 a month pay he gets without making a soup-taster of him and sacrificing his peritonal arrangement to science. We don't see how he can be expected to shoulder arms to any graceful extent when earthquakes in the region of his umbilicus demand his undivided attention."

### 80 Years Ago

The Indian Council at Fort Smith, Arkansas, is continued, and will soon be concluded. On the 13th, Commissioner Cooley asked if the different tribes were ready to sign the treaty of peace. The agents for the Seminoles and Cherokees said their people had read it and would sign it the next day. On Thursday, 14 Sept., a treaty of permanent peace with the United States was signed by the representatives of the Osages, Seminoles, Creeks, Chickasaws, Cowskins, Senecas, Shawnees, Choctaws, and Quapaws.



L  
for

s for re-  
s except

rtaining  
nquiries  
dent, U.  
London,

at H. R.  
o served  
World  
s to all  
them to  
rade in  
War II  
also per-  
rice per-  
e count-

end the  
44 to in-  
y to all  
f major  
ymments  
officially

s Fleets  
ous in-  
at Hal-  
pinned  
rdment  
pursued

s of the  
resident  
c of the  
cement  
Doug-  
iser to

Thomas  
Miss  
is an-  
e place

the sol-  
\$13 a  
a soup-  
eritoni-  
on't see  
r arms  
quakes  
and his

th, Ar-  
oon be  
ssioner  
s were  
t. The  
orokees  
would  
ay, 14  
e with  
he rep-  
inoles,  
enecas,  
s.

th  
ll  
w  
vi  
in  
m

2n  
Ca  
Ca  
Ca  
1st  
2n  
1st

M

70  
CA

or

or re-  
cept

ining  
niries  
nt, U.  
ndon,

H. R.  
erved  
World  
to all  
m to  
le in  
ar II  
per-  
bunt-

the  
to in-  
to all  
ajor  
ents  
ally

heets  
in-  
Hal-  
ned  
ent  
ued

the  
lent  
the  
ent  
oug-  
to

nas  
liss  
an-  
nce

sol-  
a  
up-  
ni-  
see  
ms  
res  
his

Ar-  
be  
er  
re  
he  
es  
ld  
14  
th  
p-  
es,  
as,



## Sea Service Casualties

### SAFE

**U. S. Navy**  
\*Comdr. C. E. Houston  
\*Lt. Comdr. D. F. White

**U. S. Naval Reserve**  
\*Lt. Comdr. S. A. Newman  
\*Lt. H. T. Houston  
\*Lt. (jg) R. W. Mann  
\*Ens. E. J. Walasek  
\*Ens. J. T. Wasson  
\*Ens. R. Brinick  
\*Lt. (jg) R. M. Applegate

**U. S. Marine Corps**  
†Capt. T. E. Pulos

**U. S. Marine Corps Reserve**  
\*Maj. G. Boyington  
\*Maj. D. W. Boyle  
\*1st Lt. S. S. Smith

\*Ens. F. D. Turnbull  
\*Lt. (jg) J. M. Boul-din  
\*Ens. H. R. Eyer  
\*Ens. E. W. Matthews  
\*Lt. (jg) J. D. Welsh  
\*Lt. J. W. Condit  
\*Lt. P. Perabo, jr.  
\*Ens. E. W. Baker

### DEAD

**U. S. Navy**  
\*Lt. Comdr. C. B. A. Holmstrom  
\*Lt. R. R. Ross

**U. S. Naval Reserve**  
\*Lt. (jg) F. B. Weiler  
†Lt. H. C. Knight

**U. S. Marine Corps**  
Lt. Comdr. R. T. Schaeffer  
\*Lt. (jg) N. W. Becker  
\*Ens. H. C. Forsberg  
\*Lt. (jg) W. Garber  
\*Lt. C. L. Dozark  
\*Ens. G. R. Nichols  
\*Lt. T. F. Wilson  
\*Ens. C. P. Sosnoski  
\*Lt. J. E. Nearing  
\*Ens. C. E. Belcher  
\*Ens. J. O. Brasten

**U. S. Marine Corps Reserve**  
†Maj. O. E. Jensen  
†Capt. G. C. Lipscomb  
†Capt. P. A. Brown

\*Lt. (jg) H. H. Hart-well, jr.  
\*Lt. (jg) R. Globokar  
\*Ens. R. E. Rieger  
\*Lt. (jg) S. F. Posey  
\*Ens. E. W. Garrison  
\*Ens. A. G. Pappas  
\*Ens. N. B. Blizegalo  
\*Lt. J. S. Lavin  
\*Ens. C. F. Saine, jr.  
\*Lt. O. D. Kerens  
\*Ens. O. F. Fisher, jr.  
\*Ens. N. C. Wolf  
\*Ens. E. B. Bibb

### WOUNDED

**U. S. Navy**  
Capt. C. B. McVay, III  
Lt. Comdr. L. L. Haynes

**U. S. Naval Reserve**  
Lt. R. B. Redmayne  
Lt. H. Tonry  
Lt. E. F. Hensch  
Lt. (jg) C. B. McKissick  
Ens. D. J. Blum  
Lt. (jg) R. S. Murray  
Ens. C. D. Vleth

\*Ens. H. M. Twible  
\*CG C. M. Harrison  
\*Gr. D. R. Horner  
\*Mach. H. C. Hanson  
\*Ens. R. Rogers, jr.  
\*Ens. J. Woolston  
\*Ens. J. D. Howison  
\*Lt. (jg) W. Wenner  
\*Lt. (jg) M. W. Mod-disher  
\*Lt. L. I. Perry  
\*Lt. F. F. Bush, jr.

### MISSING

**U. S. Navy**  
Lt. Comdr. E. R. Holt, jr.  
Lt. Comdr. A. B. Hamm

**U. S. Naval Reserve**  
Lt. Comdr. E. F. Gibson  
Lt. (jg) B. A. Gal-lagher  
Ens. W. McM. Hol-ligan  
Lt. (jg) W. S. Ander-son  
Ens. E. H. Dodge  
Lt. (jg) D. O. Hen-riksen  
Lt. (jg) J. Simms, II  
Lt. (jg) T. H. Mor-ton  
Ens. W. A. Kulczykeli  
Ens. L. H. Ahern  
Ens. R. T. Cunning-ham  
Ens. H. Baler, jr.  
Lt. J. D. Keeling

\*Lt. E. D. Hackman  
\*Lt. (jg) R. W. Strassle  
\*Lt. (jg) P. A. Gossett  
\*Ens. A. L. Morris  
\*Ens. K. W. Radcliffe  
\*Lt. (jg) J. J. Parpal  
\*Lt. Comdr. K. R. Phillips  
\*Lt. A. C. Sheffloe  
\*Lt. (jg) J. D. Brown  
\*Lt. L. G. Christison  
\*Ens. A. P. Breeden, jr.  
\*Lt. (jg) P. L. Mit-chell  
\*Lt. T. K. Miles  
\*Lt. (jg) H. E. Eagleston, jr.  
\*Ens. N. E. Sims  
\*Lt. J. B. Rainey, jr.  
\*Lt. (jg) T. E. Jensen  
\*Lt. Comdr. E. O'D. Henry

## Army Casualties

Following are the officers included in the lists of dead, wounded, missing and liberated prisoners of war issued this week by the War Department.

In all cases the next of kin have previously been notified and have been kept informed directly by the War Department of any change in status.

### DEAD—PACIFIC REGIONS

2nd Lt. R. J. Gaines  
Capt. W. R. Macker  
Capt. F. T. Bruni  
Capt. C. H. Spain  
1st Lt. D. L. Keiffer  
2nd Lt. G. L. Dow  
1st Lt. Van Kannon

2nd Lt. J. Furge  
2nd Lt. J. A. Fuller  
2nd Lt. T. J. Harrison  
2nd Lt. R. B. Hall  
2nd Lt. C. C. Larsen  
1st Lt. B. M. Vowell  
2nd Lt. N. Harris

**Mid City**  
UNIFORM CAP COMPANY  
2330 W. Cermak Road, Chicago 8, Ill.  
WORLD'S LARGEST MAKERS OF QUALITY CAPS FOR OFFICERS AND ENLISTED MEN

# OFFICIAL ORDERS

(Publication suspended for duration of War)

### DEAD—EUROPEAN REGIONS

FO C. D. Steffen  
1st Lt. E. F. Cothren, jr.  
2nd Lt. R. S. Kuehner  
1st Lt. P. E. Mellers  
1st Lt. J. D. Lamp-man, jr.  
1st Lt. A. R. Wil-liams, jr.  
2nd Lt. L. C. Crutch-field, jr.  
2nd Lt. O. N. Wahl  
FO A. J. Langston  
1st Lt. R. G. McPherson  
1st Lt. D. L. Hart  
2nd Lt. R. N. Greene

2nd Lt. W. W. Hockaday  
2nd Lt. J. C. McClure  
2nd Lt. J. Kunz, jr.  
2nd Lt. D. E. German  
2nd Lt. E. A. Bogart  
2nd Lt. E. N. Robert-son  
2nd Lt. E. I. Weseman  
1st Lt. N. J. Gorski  
2nd Lt. F. A. Dailas  
2nd Lt. R. G. Carlson  
2nd Lt. J. C. Rose, jr.  
2nd Lt. M. J. Clark  
2nd Lt. L. Markley  
2nd Lt. S. C. Brauer

### WOUNDED—PACIFIC REGIONS

Capt. Leonard L. Swartz

### MISSING—PACIFIC REGIONS

2nd Lt. W. L. McDaniel  
Capt. R. G. Hochuli

### LIBERATED PRISONERS—JAPAN

2nd Lt. W. Moritz  
2nd Lt. H. J. Anderson, jr.  
2nd Lt. J. J. McEachern  
1st Lt. E. A. Pickett  
1st Lt. A. S. Romoser  
2nd Lt. F. S. Green  
1st Lt. A. P. O'Hara, jr.  
1st Lt. V. E. Morris  
FO Lt. J. K. Wisener  
1st Lt. N. D. Collier  
2nd Lt. F. F. Fielder  
2nd Lt. O. W. Wil-liams, jr.  
Capt. J. W. Speck  
FO M. S. Kennard  
Maj. W. M. Cox, jr.  
Capt. W. J. Gay  
1st Lt. R. L. Fink  
1st Lt. H. H. Hoff-mann  
2nd Lt. J. P. Lattimore  
1st Lt. R. R. Martin-dale  
Capt. C. L. Taylor  
2nd Lt. A. D. Scott  
Capt. W. L. Arthur  
2nd Lt. A. R. Beck-ington  
2nd Lt. A. H. And-rews  
WOJG C. W. Audet  
Maj. H. G. Elkin  
1st Lt. C. C. Fillmore  
FO P. M. Clark  
2nd Lt. B. D. Holt  
1st Lt. M. S. Watkins  
2nd Lt. J. W. Ed-wards  
Brig. Gen. J. R. N. Weaver  
1st Lt. G. F. Falvre  
Col. R. H. Carmichael

2nd Lt. T. C. Cartwright  
2nd Lt. W. P. Tribble  
1st Lt. R. E. Stensland  
1st Lt. R. G. Teborek  
Capt. L. C. Allen  
1st Lt. W. B. Strel-nik  
2nd Lt. R. M. Smith  
Capt. M. Unterman  
1st Lt. C. K. Britt  
2nd Lt. R. M. Hum-phrey  
2nd Lt. J. D. Winn  
Col. J. R. Mancee  
1st Lt. J. H. Newcomb  
1st Lt. V. D. Newby  
2nd Lt. J. M. Hobbie  
Col. J. F. Cottrell  
Col. W. E. Cooper  
Maj. A. W. Braun  
2nd Lt. S. M. Downing  
1st Lt. D. E. Wilmer  
Capt. W. E. Ince  
Capt. L. A. Stoddard  
1st Lt. B. J. Martin  
Capt. C. K. Taylor, jr.  
2nd Lt. R. N. Heintz  
1st Lt. H. H. Hoff-mann  
1st Lt. J. B. Boynton  
1st Lt. L. E. Decker  
1st Lt. G. E. Norris  
1st Lt. D. H. Smith  
1st Lt. O. W. Keithly  
1st Lt. E. G. Smith  
2nd Lt. R. F. Halloran  
1st Lt. R. E. Heide-lbaugh  
1st Lt. C. J. Wimer  
Capt. E. E. Zweifel  
2nd Lt. M. G. Hught  
2nd Lt. M. L. Greene  
1st Lt. W. C. Grounds  
Capt. W. D. Parker  
1st Lt. A. M. Moh-nac  
2nd Lt. F. Hanley

### Army Promotions

The following temporary promotions in the Army of the United States have been announced by the War Department:

**Lt. Col. to Colonel**  
C. W. Williams, AC  
C. L. Fox, TC  
W. W. Cutler, jr., MC  
A. M. Hude, AC  
H. C. Rose, GSC

**Maj. to Lt. Col.**  
M. D. Craighill, MC  
O. La Farge, AC  
H. W. Handley, Inf.  
W. P. Berkeley, AC  
J. A. Major, Ch.  
M. V. B. Brooks, QMC  
J. S. Sensenbrenner, AUS  
D. H. Smith, Inf.

H. W. Brosin, MC  
P. B. Diver, OD  
W. J. E. Roop, CE  
J. E. Bragger, AC  
R. Q. Williams, AC

M. J. Barry, Inf.  
D. Sommers, AC  
F. J. Heringhaus, MC  
H. Davis, Inf.  
P. Z. Rutschow, AC  
C. I. Lutz, jr., GSC  
D. T. Foley, AC  
M. H. Green, MC  
A. O. Glass, AUS

**Luxemburg**  
MILITARY & CIVILIAN TAILORS  
485 MADISON AVENUE, NEW YORK  
OFFICERS' UNIFORMS—Hand Tailored to Order  
INSIGNIA—Army—Navy—Marines—ACCESSORIES  
The Finest CAP in the Army

### INSURANCE AT COST

Automobile  
Household & Personal Effects  
Personal Automobile Accident

**UNITED SERVICES**  
AUTOMOBILE ASSOCIATION  
San Antonio, Texas

J. G. Getz, jr., AUS  
A. G. Flues, AC  
D. W. Stevens, Ch.  
J. E. Horton, Sig C  
E. W. Morgan, TC  
T. J. Harvey, jr., AUS  
H. S. Spurgin, AUS  
A. L. Thomas, AGD  
W. W. Storey, OD  
W. J. Johnson, MC  
R. N. Smith, AC  
W. W. Richardson, AC  
N. Freeman, MC  
J. E. Meyer, jr., TC

### Captain to Major

J. R. Dibble, CAC  
L. J. Wilbert, jr., AC  
G. O. Kelley, AC  
R. W. Fort, AUS  
D. G. O'Roke, OD  
J. L. Holton, Inf.  
D. A. Wilson, AC  
L. B. Keffer, AUS  
O. V. Mahan, jr., AC  
R. M. Leighton, QMC  
D. B. Mellstrup, MC  
A. D. Molohon, AUS  
M. I. Samuelson, AGD  
B. H. Daniel, CWS  
H. B. Bates, MC  
M. A. Melyn, MC  
P. C. Leahy, CE  
W. E. Kendle, DC  
H. S. Sherman, AC  
F. H. Bragg, AC  
A. W. Kurz, Sig C  
G. H. Figner, OD  
J. R. Steels, JAGD  
L. C. Pence, MC  
E. E. Narlick, AC  
W. B. Mathews, TC  
C. B. Rowe, AC  
J. D. Mitchell, TC

A. M. Koplin, CE  
A. L. Schaidler, CE  
R. M. Theodore, DC  
G. Dukehart, Cav.  
M. D. Elliott, DC  
J. J. Koenig, AUS  
J. E. Morressey, TC  
J. Hartman, AC  
R. S. Kove, DC  
E. A. Karr, AC  
T. O. McCabe, OD  
J. L. Gushman, CAC  
M. N. Pheatt, AC  
F. D. Walker, AC  
R. H. Redfield, AC  
J. R. Hendrickson, CE  
A. H. Robinson, AUS  
W. C. Everhart, AC  
H. S. Abrams, MC  
J. M. Fryer, QMC  
K. C. Wilde, AC  
C. H. McFatridge, AC  
W. B. Birch, jr., AC  
R. H. Wallace, TC  
G. A. Miller, MC  
J. R. Anderson, JAGD  
R. W. Haines, Inf.  
P. B. Smith, MC.

### Calendar Of Legislation

#### ACTION ON LEGISLATION

S. 1215. To reimburse Marine Corps personnel for personal property lost in the disaster to the steamship Maasdam, 26 June, 1941. Passed by Senate.

S. 1135. To reimburse Naval personnel for property lost or damaged by fire at Norfolk, Va., naval auxiliary station, 13 Feb., 1945. Passed by Senate.

S. 1134. To reimburse Naval and Marine Corps personnel for personal property lost or damaged by fire in buildings 102 and 102-A

## Army and Navy Journal

September 22, 1945

129

In Utulei, Tutuila, American Samoa, 17 Aug., 1944. Passed by Senate.

S. 1119. To reimburse Navy personnel for personal property lost or damaged by fire in building 146 at the naval operating base, Bermuda, 26 April, 1945. Passed by Senate.

S. 1118. To reimburse Lt. Jack Sanders, USMCR, for the loss of personal property destroyed by an explosion at Camp Lejeune, N. C., 22 Jan., 1945. Passed by Senate.

S. 1103. To reimburse Naval personnel for personal property lost or damaged by fire at Devon, England, Quonset Hut No. 2, Hamoaze House. Passed by Senate.

S. 1102. To reimburse Navy personnel for personal property lost or damaged by fire at the U. S. naval convalescent hospital, Banning, Calif., 5 March, 1945. Passed by Senate.

S. 1076. To reimburse Navy personnel for personal property lost or destroyed by fire at the naval station Tutuila, American Samoa, 20 Oct., 1943. Passed by Senate.

S. 1354. To authorize permanent appointment in the grades of General of the Army and Fleet Admiral of the Navy of those who have served in such grades during World War II. Passed, amended to include the general in the Marine Corps, by the Senate.

S. 1036. To provide for the payment of accumulated or accrued leave to members of the military and naval forces who enter or re-enter civilian employment of the United States, its Territories or possessions, or of the District of Columbia, before the expiration of such leave. Passed by Senate.

S. 1045. To provide for pay and allowances and transportation and subsistence of personnel discharged or released from the Navy, Marine Corps, and Coast Guard because of minority at time of enlistment. Passed by House.

S. 397. To provide for the presentation of medals to members of the United States Antarctic Expedition of 1939-1941. Passed by House. To President.

H. R. 1128. To incorporate the Regular Veterans Association. Passed by House.

H. R. 1123. To increase temporarily to 24 the age limit of appointees to West Point. Passed, Amended by House.

H. R. 1591. To provide for the appointment of additional cadets at West Point and Annapolis from among the sons of officers, soldiers, sailors, and marines who have been or shall be awarded the Congressional Medal of Honor. Passed by House.

H. R. 1668. To authorize an increase in the appointment to West Point and Annapolis of sons of members of the land or naval (Please turn to Next Page)

# REGULATION BATTLE JACKET

in Two Smart New Fabrics

Expertly tailored to your individual measure in a choice of regulation Olive Drab Shade quality serge or distinctive Elastique (close woven twill) in the dressy dark green shade. Ample cut over famed Associated patterns . . . assures freedom of movement yet gives neat appearance. Fully lined with long wearing rayon satin. Adjustable waist band designed like the belt on dress blouse. A truly remarkable value in the Associated tradition which has pleased discriminating officers since 1917.

18 oz. REGULATION

O. D. SHADE  
SERGE

\$32.50

18 oz. ELASTIQUE

IN THE  
DARK GREEN SHADE

\$37.00

Tailored to your individual measure



### MEASUREMENTS

Weight .....

Height .....

Chest .....

Sleeve (Shirt) .....

Waist .....

### Gentlemen:

Send me Battle Jackets in accordance with measurements given herewith.

Name ..... Rank .....

Serial No. ....

Organization .....

Post ..... State .....



**ASSOCIATED**  
Military Stores, Inc.

19 W. JACKSON BLVD.  
DEPT. N.J. CHICAGO 4, ILL.



Calendar of Legislation  
(Continued from Preceding Page)

forces of the United States who were killed in action or have died, or may hereafter die, of wounds or injuries received, or disease contracted, or preexisting injury or disease aggravated in active service during either World War. Passed by House.

H. R. 2525. To include step-parents among those persons to whom allowances may be paid under the Pay Readjustment Act. Passed amended, by House.

H. R. 3755. To establish an Optometry Corps in the Medical Department of the United States Army. Passed by House.

H. R. 3951. To stimulate volunteer enlistments in the Regular Army and Navy of the United States. Passed by House.

## BILLS INTRODUCED

S. 1386. Sen. Overton, La. and H. R. 4097. Rep. McKenzie, La. To permit Maj. Gen.

Claire L. Chennault to retire at the highest rank held by him while on active duty.

H. R. 4051. Rep. Rogers, Fla. To grant to enlisted personnel of the armed forces money benefits in lieu of accumulated leave.

S. 1337. Sen. Revercomb, West Va., and Sen. Byrd, Va. To provide for voluntary enlistments in the AUS and the Naval Reserve.

S. 1404. Sen. Walsh, Mass., and H. R. 4102. Rep. Vinson, Ga. To increase the permanent authorized strength of the active list of the Regular Navy and Marine Corps, to increase the permanent authorized number of commissioned officers of the active list of the line of the Regular Navy, and to authorize permanent appointments in the Regular Navy and Marine Corps.

S. 1405. Sen. Walsh, Mass. and H. R. 4101. Rep. Vinson, Ga. To authorize the President to retire certain officers of the Regular Navy and the Regular Marine Corps.

H. R. 4086. Rep. Haverneer, Calif. To provide that all general officers in the Regular Army appointed to a higher temporary grade shall revert to their permanent grade.

## SCHOOL AND CAMP DIRECTORY

The Schools and Camps listed below are effectively equipped to care for the educational and recreational needs of the children of members of the services and this Directory is recognized as an authentic and reliable aid to service parents in solving the problem of child education. For details as to the Schools listed in this Directory address them directly, or communicate with the Army and Navy Journal Department of Education, 1711 Conn. Ave., Washington 9, D. C.

## ALABAMA

## MARION INSTITUTE

Four-year High School. Standard Junior College. Special department for preparation for Annapolis and West Point. ROTC military training. Accelerated program. Fully accredited. Sports. 108th year. Catalogue, Col. J. T. Murfee, Pres., Box 1, Marion, Ala.

## CALIFORNIA



ANNAPOLIS, WEST POINT, COAST GUARD, FLYING FIELD. Brilliant success in exams. "I chose your school for my son, and he is at both Annapolis and West Point your boys stood out." Make up shortages, including new-required lab. chemistry while tutoring for exams. 2901 CALIFORNIA STREET San Francisco

## LA LOMA FELIZ SCHOOL

## SANTA BARBARA, CALIFORNIA

A Country Day and Boarding School for boys and girls from 6 to 17. Hamilton W. Bingham, Headmaster

## NAVAL ACADEMY, WEST POINT, AND COAST GUARD ACADEMY

A school organized for the sole purpose of preparing candidates for the three Service Academies. Directed by W. R. Rutherford, formerly Educational Director, Navy Department. For information and references, address

RUTHERFORD PREPARATORY SCHOOL  
Long Beach, Calif.

## FLORIDA

## ADMIRAL FARRAGUT ACADEMY

Florida unit in St. Petersburg. Naval, Military, Aviation. Prepares for all colleges, gov't academies, Grades 5-12. All sports. Band. Fleet of boats, including 70-ft. power yacht. 215 acres. Catalog, Box W, St. Petersburg, Florida.

## GEORGIA

## GEORGIA MILITARY ACADEMY

8 miles from Atlanta—Fine, equable climate. Many cultural advantages—accredited. Courses of study. College and West Point-Annapolis Prep. Jr. College. 2-yr. course in Bus. Adm. for high school grads. Post Grad. course to strengthen foundation for college. Junior school. A separate department for young boys. Athletics. Expert coaches develop teams in major sports. Home Life. Cadets live in small groups with their teachers. For Catalog address: Col. W. P. Brewster, College Park, Ga.

## MARYLAND

## SEVERN SCHOOL

Specialized preparation for colleges, technical schools, Annapolis, West Point, Coast Guard Academy. Grades 8-12. Small classes, individual attention. Fully accredited. Athletics. Summer session—June 13-Aug. 23. Fall term Sept. 12. 22nd yr. Catalog. Sottland H. Tate, P.M., Box 100, Severn Park, Md.

## These Schools

Invite requests for catalogues and information. In writing, kindly mention The Journal.

## NEW HAMPSHIRE

## EMERSON

Sound scholastic training. Healthful sports program stresses physical fitness. Small—8 to 15 YEARS classes. Security in homelike atmosphere for boys of parents in services. 50 miles by train from Boston. Edward E. Emerson, Headmaster, Box 75, Exeter, N. H.

## NEW YORK

## WEST POINT

Stanton Preparatory Academy  
Cornwall, N. Y.

Established 1925

COL. H. G. STANTON,  
Graduate, West Point, former instructor  
and Asst. Prof., U.S.M.A., West Point,  
N. Y.

## PEEKSKILL MILITARY ACADEMY

Prepares for all colleges, including West Point and Annapolis. Also business courses. Senior and Junior School, 115 years old. 66 miles from New York. Individual attention. Catalog. Lt. Col. Thomas K. Fisher, Headmaster, Peekskill-on-Hudson, N. Y.

## The BRADEN SCHOOL

Preparing for West Point and Annapolis.  
H. V. Van Slyke, Cornwall-on-Hudson, N. Y.

## PENNSYLVANIA

## PERKIOMEN

Boys Really Learn How to Study. Thorough individualized teaching. Small classes. Grades 5-12. Remedial Reading Program. College and service preparation. Mathematics, science, physical fitness stressed. Separate Junior School. Country location. A. E. ROGERS, Hdmr., Box A, Pottsville, Pa.

## WASHINGTON, D. C.

## SULLIVAN SCHOOL

ANNAPOLIS • WEST POINT PREP  
Lieutenant G. J. Sullivan, retired  
Box 1, 2107 Wyoming Ave., Washington 5, D. C.

## LONGFELLOW SCHOOL

Grades 1-9. Sound individualized instruction for boys in simple homelike atmosphere. Day, boarding. Whole-some meals under dietitian. Housemother, health check-ups, directed recreation. All sports. Fireproof buildings. Catalog, Box 3, Edgemoor, Washington 14, D. C.

## LONDON SCHOOL

For boys. Strict college prep. Small study groups. Limited enrolment. Student govt. honor system developing initiative. Separate lower school. 75-acre wooded campus closely suburban to Washington. Sports. Catalog J. Paul L. Ranfield, Headmaster, Bradley Lane, Bethesda Washington 14, D. C.

## Development of Atomic Bomb

(Following is a continuation, from last week's issue of the ARMY AND NAVY JOURNAL of the text of the report on the development of atomic energy for military purposes. The report was prepared by H. D. Smyth, chairman of the Department of Physics of Princeton University, at the request of Maj. Gen. L. R. Groves, USA, who had charge of the atomic bomb project.)

PART II  
PROGRESS TOWARD THE ULTIMATE OBJECTIVEPlanning a Production Plant  
Planning and Technical Work

6.40. As we have seen, the initial objectives of the Metallurgical Laboratory had been reached by the end of 1942, but the ultimate objectives, the production of large quantities of plutonium and the design and fabrication of bombs, were still far from attained. The responsibility for the design and fabrication of bombs was transferred to another group about this time; its work is reported in Chapter XII. The production of Pu-239 in quantity has remained the principal responsibility of the Metallurgical Laboratory although shared with the du Pont Company since the end of 1942.

6.41. On the basis of the evidence available it was clear that a plutonium production rate somewhere between a kilogram a month and a kilogram a day would be required. At the rate of a kilogram a day, a 500,000 to 1,500,000 kilowatt plant would be required. (The ultimate capacity of the hydroelectric power plants at the Grand Coulee Dam is expected to be 2,000,000 kw.) Evidently the creation of a plutonium production plant of the required size was to be a major enterprise even without attempting to utilize the thermal energy liberated. Nevertheless, by November 1942, most of the problems had been well defined and tentative solutions had been proposed. Although these problems will be discussed in some detail in the next chapter, we will mention them here.

6.42. Since a large amount of heat is generated in any pile producing appreciable amounts of plutonium, the first problem of design is a cooling system. Before such a system can be designed, it is necessary to find the maximum temperature at which a pile can run safely and the factors—nuclear or structural—which determine this temperature. Another major problem is the method for loading and unloading the uranium, a problem complicated by the shielding and the cooling system. Shielding against radiation has to be planned for both the pile itself and the chemical separation plant. The nature of the separation plant depends on the particular separation process to be used, which has to be decided. Finally, speed of procurement and construction must be primary factors in the planning of both the pile and the chemical plant.

## Possible Types of Plant

6.43. After examining the principal factors affecting plant design, i.e., cooling, efficiency, safety, and speed of construction, the "Feasibility Report" suggested a number of possible plant types in the following order of preference:

- Ordinary uranium metal lattice in a graphite moderator with helium cooling.
- The same, with water cooling.
- The same, with molten bismuth cooling.
- Ordinary uranium metal lattice in a heavy-water moderator.

Types II and III were of no immediate interest since neither enriched uranium nor heavy water was available. Development of both these types continued, however, since if no other type proved feasible they might have to be used. Type I, calling for liquid bismuth cooling, seemed very promising from the point of view of utilization of the thermal energy released, but it was felt that the technical problems involved could not be solved for a long time.

## The Pilot Plant at Clinton

6.44. During this period, the latter half of 1942, when production plants were being planned, it was recognized that a plant of intermediate size was desirable. Such a plant was needed for two reasons: first, as a pilot plant; second, as a producer of a few grams of plutonium badly needed for experimental purposes. Designed as an air-cooled plant of 1,000-kw capacity, the intermediate pile constructed at Clinton, Tennessee, might have served both purposes if helium cooling had been retained for the main plant. Although the plans for the main plant were shifted so that water cooling was called for, the pilot plant was continued with air-cooling in the belief that the second objective would be reached more quickly. It thus ceased to be a pilot plant except for chemical separation. Actually the main plant was built without benefit of a true pilot plant, much as if the hydroelectric generators at Grand Coulee had been designed merely from experience gained with a generator of quite different type and of a small fraction of the power.

## Specific Proposals

6.45. As reviewed by Hilberry in the "Feas-

ibility Report" of 26 November 1942, the prospects for a graphite pile with helium cooling looked promising as regards immediate production; the pile using heavy water for moderator and using heavy water or ordinary water as coolant looked better for eventual full-scale use. A number of specific proposals were made for construction of such plants and for the further study of the problems involved. These proposals were based on time and cost estimates which were necessarily little better than rough guesses. As the result of further investigation the actual program of construction—described in later chapters—has been quite different from that proposed.

## Summary

6.46. The procurement problem which had been delaying progress was essentially solved by the end of 1942. A small self-sustaining graphite-uranium pile was constructed in November 1942, and was put into operation for the first time on 2 December, 1942, at a power level of 1/2 watt and later at 200 watts. It was easily controllable, thanks to the phenomenon of delayed neutron emission. A total of 500 micrograms of plutonium was made with the cyclotron and separated chemically from the uranium and fission products. Enough was learned of the chemistry of plutonium to indicate the possibility of separation on a relatively large scale. No great advance was made on bomb theory, but calculations were checked and experiments with fast neutrons extended. If anything, the bomb prospects looked more favorable than a year earlier.

6.47. Enough experimenting and planning were done to delineate the problems to be encountered in constructing and operating a large-scale production plant. Some progress was made in choice of type of plant, first choice at that time being a pile of metallic uranium and graphite, cooled either by helium or water. A specific program was drawn up for the construction of pilot and production plants. This program presented time and cost estimates.

CHAPTER VII  
THE PLUTONIUM PRODUCTION PROBLEM AS OF FEBRUARY 1943

## Introduction

## Need of Decisions

7.1. By the first of January 1943 the Metallurgical Laboratory had achieved its first objective, a chain-reacting pile, and was well on the way to the second, a process for extracting the plutonium produced in such a pile. It was clearly time to formulate more definite plans for a production plant. The policy decisions were made by the Policy Committee (see Chapter V) on the recommendations from the Laboratory Director (A. H. Compton), from the S-1 Executive Committee, and from the Reviewing Committee that had visited Chicago in December 1942. The only decisions that had already been made were that the first chain-reacting pile should be dismantled and then reconstructed on a site a short distance from Chicago and that a 1,000-kilowatt plutonium plant should be built at Clinton, Tennessee.

## The Scale of Production

7.2. The first decision to be made was on the scale of production that should be attempted. For reasons of security the figure decided upon may not be disclosed here. It was very large.

## The Magnitude of the Problem

7.3. As we have seen, the production of one gram of plutonium per day corresponds to a generation of energy at the rate of 500 to 1,500 kilowatts. Therefore, a plant for large-scale production of plutonium will release a very large amount of energy. The problem therefore was to design a plant of this capacity on the basis of experience with a pile that could operate at a power level of only 0.2 kilowatt. As regards the plutonium separation work, which was equally important, it was necessary to draw plans for an extraction and purification plant which would separate some grams a day of plutonium from some tons of uranium, and such planning had to be based on information obtained by microchemical studies involving only half a milligram of plutonium. To be sure, there was information available for the design of the large-scale pile and separation plant from auxiliary experiments and from large-scale studies of separation processes using uranium as a stand-in for plutonium, but even so the proposed extrapolations both as to chain-reacting piles and as to separation processes were staggering. In peacetime no engineer or scientist in his right mind would consider making such a magnification in a single stage, and even in wartime only the possibility of achieving tremendously important results could justify it.

## Assignment of Responsibility

7.4. As soon as it had been decided to go ahead with large-scale production of plutonium, it was evident that a great expansion in organization was necessary. The Stone and Webster Engineering Corporation had been selected as the overall engineering and construction firm for the DSM Project soon after the Manhattan District was placed in charge of construction work in June 1942. By October 1942 it became evident that various component parts of the work were too far separated physically and were too complicated to be handled by a single organization. (Please turn to Next Page)



## Development of Atomic Bomb (Continued from Preceding Page)

cated technically to be handled by a single company—especially in view of the rapid pace required. Therefore it was decided that it would be advantageous if Stone and Webster were relieved of that portion of the work pertaining to the construction of plutonium production facilities. This was done, and General Groves selected the E. I. du Pont de Nemours and Company as the firm best able to carry on this phase of the work. The arrangements made with various industrial companies by the Manhattan District took various forms. The arrangement with du Pont is discussed in detail as an example.

7.5. General Groves broached the question to W. S. Carpenter, Jr., president of du Pont, and after considerable discussion with him and other officials of the firm, du Pont agreed to undertake the work. In their acceptance, they made it plain and it was understood by all concerned that du Pont was undertaking the work only because the War Department considered the work to be of the utmost importance, and because General Groves stated that this view as to importance was one held personally by the President of the United States, the Secretary of War, the Chief of Staff, and General Groves, and because of General Groves' assertion that du Pont was by far the organization best qualified for the job. At the same time it was recognized that the du Pont Company already had assumed all the war-connected activities which their existing organization could be expected to handle without undue difficulty.

7.6. The du Pont Company, in accepting the undertaking, insisted that the work be conducted without profit and without patent rights of any kind accruing to them. The du Pont Company did request, however, that in view of the unknown character of the field into which they were being asked to embark, and in view of the unpredictable hazards involved, the Government provide maximum protection against losses sustained by du Pont.

7.7. The cost-plus-a-fixed-fee contract between the Government and du Pont established a fixed fee of \$1.00. The Government agreed to pay all costs of the work by direct reimbursement or through allowances provided by the contract to cover administrative and general expenses allocated to the work in accordance with normal du Pont accounting practices as determined by audit by certified public accountants. Under the terms of the contract, any portion of these allowances not actually expended by du Pont will, at the conclusion of the work, be returned to the United States. The contract

also provided that no patent rights would accrue to the company.

7.8. The specific responsibilities assumed by du Pont were to engineer, design, and construct a small-scale semi-works at the Clinton Engineer Works in Tennessee and to engineer, design, construct, and operate a large-scale plutonium production plant of large capacity at the Hanford Engineer Works in the State of Washington. Because of its close connection with fundamental research, the Clinton semi-works was to be operated under the direction of the University of Chicago. A large number of key technical people from du Pont were to be used on a loan basis at Chicago and at Clinton, to provide the university with much needed personnel, particularly men with industrial experience, and to train certain of such personnel for future service at Hanford.

7.9. Inasmuch as du Pont was being asked to step out of its normal role in chemistry into a new field involving nuclear physics, it was agreed that it would be necessary for them to depend most heavily upon the Metallurgical Laboratory of the University of Chicago for fundamental research and development data and for advice. The du Pont Company had engineering and industrial experience, but it needed the Metallurgical Laboratory for nuclear-physics and radiochemistry experience. The Metallurgical Laboratory conducted the fundamental research on problems bearing on the design and operation of the semi-works and large-scale production plants. It proposed the essential parts of the plutonium production and recovery processes and equipment, answered the many specific questions raised by du Pont, and studied and concurred in the final du Pont decisions and designs.

7.10. The principal purpose of the Clinton semi-works was development of methods of operation for plutonium recovery. The semi-works had to include, of course, a unit for plutonium production, in order to provide plutonium to be recovered experimentally. In the time and with the information available, the Clinton production unit could not be designed to be an early addition of the Hanford production units which, therefore, had to be designed, constructed and operated without major guidance from Clinton experience. In fact, even the Hanford recovery units had to be far along in design and procurement of equipment before Clinton results became available. However, the Clinton semi-works proved to be an extremely important tool in the solution of the many completely new problems encountered at Hanford. It also produced small quantities of plutonium which, along with Metallurgical Laboratory data on the properties of pluto-

(Please Turn to Next Page)



### NAVAL FLIGHT NURSE

AMICO presents the new and distinctive insignia of the Naval Flight Nurse—authorized by the Navy Department March 30th, 1945. Beautifully designed, exact in every detail.

1/20 10k gold filled on sterling with sterling silver acorn—at your Ship's Service.



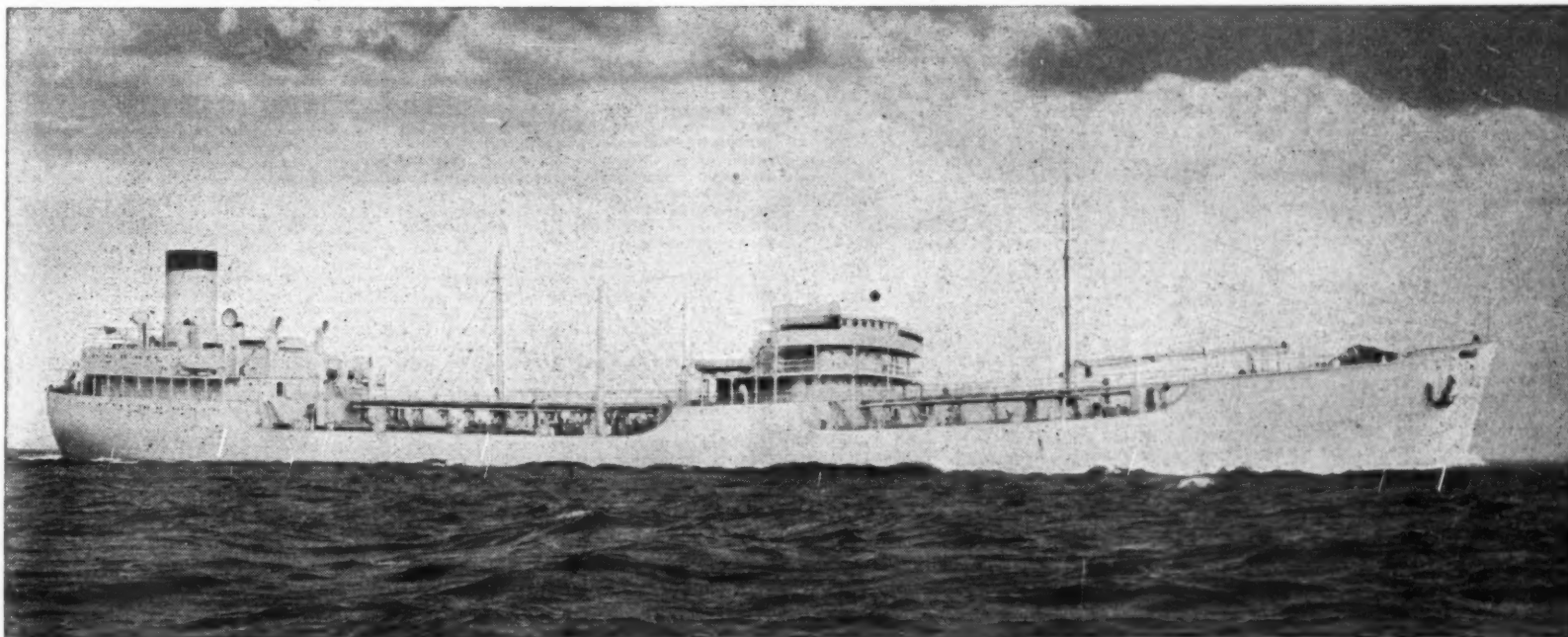
### NAVAL AVIATION OBSERVER (NAVIGATION)

Now available, this new Insignia for Naval Aviation Observers (Navigation)—authorized by the Navy Department March 31st, 1945. Made to the same exacting standards of quality and sculptured diework that characterize all AMICO INSIGNIA.

1/20 10k gold filled on sterling with sterling silver disk background. At your Ship's Service.

## AMICO INSIGNIA

AMERICAN INSIGNIA COMPANY • 160 VARICK ST., NEW YORK 13, N.Y.  
MANUFACTURERS OF MILITARY INSIGNIA FOR ALL BRANCHES OF THE SERVICE



The S/S "CIMARRON" first high speed Tanker built for Maritime Commission. Now famous in the service of our Navy.

SHIP REPAIRING — DRYDOCKING — CONVERSIONS — NEW CONSTRUCTIONS — ENGINE BUILDING — HULL AND MACHINERY REPAIR PARTS

are all Complete Services offered by this one of this Country's largest and complete Shipbuilding and Ship Repairing Plants.

# SUN SHIPBUILDING AND DRY DOCK CO.

CHESTER, PA.



## Development of Atomic Bomb (Continued from Preceding Page)

nium, enabled research in the use of this material to be advanced many months.

### Choice of Plant Site

7.11. Once the scale of production had been agreed upon and the responsibilities assigned, the nature of the plant and its whereabouts had to be decided. The site in the Tennessee Valley, known officially as the Clinton Engineer Works, had been acquired by the Army for the whole program as recommended in the report to the President (see Chapter V).

7.12. Reconsideration at the end of 1942 led General Groves to the conclusion that this site was not sufficiently isolated for a large-scale plutonium production plant. At that time, it was conceivable that conditions might arise under which a large pile might spread radioactive material over a large enough area to endanger neighboring centers of population. In addition to the requirement of isolation, there remained the requirement of a large power supply which had originally determined the choice of the Tennessee site. To meet these two requirements a new site was chosen and acquired on the Columbia River in the central part of the state of Washington near the Grand Coulee power line. This site was known as the Hanford Engineer Works.

7.13. Since the Columbia River is the finest supply of pure cold river water in this country, the Hanford site was well suited to either the helium-cooled plant originally planned or to the water-cooled plant actually erected. The great distances separating the home office of du Pont in Wilmington, Delaware, the pilot plant at Clinton, Tennessee, the Metallurgical Laboratory at Chicago, and the Hanford site were extremely inconvenient, but this separation could not be avoided. Difficulties also were inherent in bringing workmen to the site and in providing living accommodations for them.

### Choice of Type of Plant

7.14. It was really too early in the development to make a carefully weighed decision as to the best type of plutonium production plant. Yet a choice had to be made so that design could be started and construction begun as soon as possible. Actually a tentative choice was made and then changed.

7.15. In November 1942 the helium-cooled plant was the first choice of the Metallurgical Laboratory. Under the direction of T. V. Moore and M. C. Leverett, preliminary plans for such a plant had been worked out. The associated design studies were used as bases for choice of site, choice of accessory equipment, etc. Although these studies had been undertaken partly because it had been felt that they could be carried through more quickly for a helium-cooled plant than for a water-cooled plant, many difficulties were recognized. Meanwhile the theoretical group under Wigner, with the cooperation of the engineering personnel, had been asked to prepare a report on a water-cooled plant of high-power output. This group had been interested in water-cooling almost from the beginning of the project and was able to incorporate the results of its studies in a report issued on 9 January 1943. This report contained many important ideas that were incorporated in the design of the production plant erected at Hanford.

7.16. When du Pont came into the picture, it at first accepted the proposal of a helium-cooled plant but after further study decided in favor of water-cooling. The reasons for the change were numerous. Those most often mentioned were the hazard from leakage of a high-pressure gas coolant carrying radioactive impurities, the difficulty of getting large blowers quickly, the large amount of helium required, the difficulty of loading and unloading uranium from the pile, and the relatively low-power output per kilogram of uranium metal. These considerations had to be balanced against the peculiar disadvantages of a water-cooled plant, principally the greater complexity of the pile itself and the dangers of corrosion.

7.17. Like so many decisions in this project, the choice between various types of plant had to be based on incomplete scientific information. The information is still incomplete, but there is general agreement that water-cooling was the wise choice.

### THE PROBLEMS OF PLANT DESIGN

#### Specification of the Overall Problem

7.18. In Chapter II of this report we attempted to define the general problem of the uranium project as it appeared in the summer of 1940. We now wish to give precise definition to the problem of the design of a large-scale plant for the production of plutonium. The objective had already been delimited by decisions as to scale of production, type of plant, and site. As it then stood, the specific problem was to design a water-cooled graphite-moderated pile (or several such piles) with associated chemical separation plant to produce a specified, relatively large amount of plutonium each day, the plant to be built at the Hanford site beside the Columbia River. Needless to say, speed of construction and efficiency of operation were prime considerations.

### Nature of the Lattice

7.19. The lattices we have been describing heretofore consisted of lumps of uranium imbedded in the graphite moderator. There are two objections to such a type of lattice for production purposes: first, it is difficult to remove the uranium without disassembling the pile; second, it is difficult to concentrate the coolant at the uranium lumps, which are the points of maximum production of heat. It was fairly obvious that both these difficulties could be avoided if a rod lattice rather than a point lattice could be used, that is, if the uranium could be concentrated along lines passing through the moderator instead of being situated merely at points. There was little doubt that the rod arrangement would be excellent structurally and mechanically, but there was real doubt as to whether it was possible to build such a lattice which would still have a multiplication factor  $k$  greater than unity. This became a problem for both the theoretical and experimental physicists. The theoretical physicists had to compute what was the optimum spacing and diameter of uranium rods; the experimental physicists had to perform exponential experiments on lattices of this type in order to check the findings of the theoretical group.

### Loading and Unloading

7.20. Once the idea of a lattice with cylindrical symmetry was accepted, it became evident that the pile could be unloaded and reloaded without disassembly since the uranium could be pushed out of the cylindrical channels in the graphite moderator and new uranium inserted. The decision had to be made as to whether the uranium should be in the form of long rods, which had advantages from the nuclear-physics point of view, or of relatively short cylindrical pieces, which had advantages from the point of view of handling. In either case, the materials would be so very highly radioactive that unloading would have to be carried out by remote control, and the unloaded uranium would have to be handled by remote control from behind shielding.

### Possible Materials; Corrosion

7.21. If water was to be used as coolant, it would have to be conveyed to the regions where heat was generated through channels of some sort. Since graphite pipes were not practical, some other kind of pipe would have to be used. But the choice of the material for the pipe, like the choice of all the materials to be used in the pile, was limited by nuclear-physics considerations. The pipes must be made of some material whose absorption cross section for neutrons was not large enough to bring the value of  $k$  below unity. Furthermore, the pipes must be made of material which would not disintegrate under the heavy density of neutron and gamma radiation present in the pile. Finally, the pipes must meet all ordinary requirements of cooling-system pipes: they must not leak; they must not corrode; they must not warp.

7.22. From the nuclear-physics point of view there were seven possible materials (Pb, Bi, Be, Al, Mg, Zn, Sn), none of which had high neutron-absorption cross sections. No beryllium tubing was available, and of all the other metals only aluminum was thought to be possible from a corrosion point of view. But it was by no means certain that aluminum would be satisfactory, and doubts about the corrosion of the aluminum pipe were not settled until the plant had actually operated for some time.

7.23. While the choice of material for the piping was very difficult, similar choices—involving both nuclear-physics criteria and radiation-resistance criteria—had to be made for all other materials that were to be used in the pile. For example, the electric insulating materials to be used in any instruments buried in the pile must not disintegrate under the radiation. In certain instances where control or experimental probes had to be inserted and removed from the pile, the likelihood had to be borne in mind that the probes would become intensely radioactive as a result of their exposure in the pile and that the degree to which this would occur would depend on the material used.

7.24. Finally, it was not known what effect the radiation fields in the pile would have on the graphite and the uranium. It was later found that the electric resistance, the elasticity, and the heat conductivity of the graphite all change with exposure to intense neutron radiation.

### Protection of the Uranium From Corrosion

7.25. The most efficient cooling procedure would have been to have the water flowing in direct contact with the uranium in which the heat was being produced. Indications were that this was probably out of the question because the uranium would react chemically with the water, at least to a sufficient extent to put a dangerous amount of radioactive material into solution and probably to the point of disintegrating the uranium slugs. Therefore it was necessary to find some method of protecting the uranium from direct contact with the water. Two possibilities were considered: one was some sort of coating, either by electroplating or dipping; the other was sealing the uranium slug in a protective jacket or "can." Strangely enough, this "canning problem" has turned out to be one of the most difficult problems encountered in such piles.

### Water Supply

7.26. The problem of dissipating thousands

of kilowatts of energy is by no means a small one. How much water was needed depended, of course, on the maximum temperature to which the water could safely be heated and the maximum temperature to be expected in the intake from the Columbia River; certainly the water supply requirement was comparable to that of a fair-sized city. Pumping stations, filtration and treatment plants all had to be provided. Furthermore, the system had to be a very reliable one; it was necessary to provide fast-operating controls to shut down the chain-reacting unit in a hurry in case of failure of the water supply. If it was decided to use "once-through" cooling instead of recirculation, a retention basin would be required so that the radioactivity induced in the water might die down before the water was returned to the river. The volume of water discharged was going to be so great that such problems of radioactivity were important, and therefore the minimum time that the water must be held for absolute safety had to be determined.

### Controls and Instrumentation

7.27. The control problem was very similar to that discussed in connection with the first chain-reacting pile except that everything was on a larger scale and was, therefore, potentially more dangerous. It was necessary to provide operating controls which would automatically keep the pile operating at a determined power level. Such controls had to be connected with instruments in the pile which would measure neutron density or some other property which indicated the power level. There would also have to be emergency controls which would operate almost instantaneously if the power level showed signs of rapid increase or if there was any interruption of the water supply. It was highly desirable that there be some means of detecting incipient difficulties such as the plugging of a single water tube or a break in the coating of one of the uranium slugs. All these controls and instruments had to be operated from behind the thick shielding walls described below.

### Shielding

7.28. As we have mentioned a number of times, the radiation given off from a pile operating at a high power level is so strong as to make it quite impossible for any of the operating personnel to go near the pile. Furthermore, this radiation, particularly the neutrons, has a pronounced capacity for leaking out through holes or cracks in barriers. The whole of a power pile therefore has to be enclosed in very thick walls of concrete, steel, or other absorbing material. But at the same time it has to be possible to load and unload the pile through these shields and to carry the water supply in and out through the shields. The shields should not only be radiation-tight but air-tight since air exposed to the radiation in the pile would become radioactive.

7.29. The radiation dangers that require shielding in the pile continue through a large part of the separation plant. Since the fission products associated with the production of the plutonium are highly radioactive, the uranium after ejection from the pile must be handled by remote control from behind shielding and must be shielded during transportation to the separation plant. All the stages of the separation plant, including analyses, must be handled by remote control from behind shields up to the point where the plutonium is relatively free of radioactive fission products.

### Maintenance

7.30. The problem of maintenance is very simply stated. There could not be any maintenance inside the shield or pile once the pile had operated. The same remark applies to a somewhat lesser extent to the separation unit, where it was probable that a shut-down for servicing could be effected, provided, of course, that adequate remotely-controlled decontamination processes were carried out in order to reduce the radiation intensity below the level dangerous to personnel. The maintenance problem for the auxiliary parts of the plant was normal except for the extreme importance of having stand-by pumping and power equipment to prevent a sudden accidental breakdown of the cooling system.

### Schedule of Loading and Unloading

7.31. Evidently the amount of plutonium in an undisturbed operating pile increases with time of operation. Since Pu-239 itself undergoes fission its formation tends to maintain the chain reaction, while the gradual disappearance of the U-235 and the appearance of fission products with large neutron absorption cross sections tend to stop the reaction. The determination of when a producing pile should be shut down and the plutonium extracted involves a nice balancing of these factors against time schedules, material costs, separation-process efficiency, etc. Strictly speaking, this problem is one of operation rather than of design of the plant, but some thought had to be given to it in order to plan the flow of uranium slugs to the pile and from the pile to the separation plant.

### Size of Units

7.32. We have been speaking of the production capacity of the plant only in terms of overall production rate. Naturally, a given rate of production might be achieved in a single large pile or in a number of smaller ones. The principal advantage of the smaller

piles would be the reduction in construction time for the first pile, the possibility of making alterations in later piles, and—perhaps most important—the improbability of simultaneous breakdown of all piles. The disadvantage of small piles is that they require disproportionately large amounts of uranium, moderator, etc. There is, in fact, a preferred "natural size" of pile which can be roughly determined on theoretical grounds.

### General Nature of the Separation Plant

7.33. As we have already pointed out, the slugs coming from the pile are highly radioactive and therefore must be processed by remote control in shielded compartments. The general scheme to be followed was suggested in the latter part of 1942, particularly in connection with plans for the Clinton separation plant. This scheme was to build a "canyon" which would consist of a series of compartments with heavy concrete walls arranged in a line and almost completely buried in the ground. Each compartment would contain the necessary dissolving or precipitating tanks or centrifuges. The slugs would come into the compartment at one end of the canyon; they would then be dissolved and go through the various stages of solution, precipitation, oxidation, or reduction, being pumped from one compartment to the next until a solution of plutonium free from uranium and fission products came out in the last compartment. As in the case of the pile, everything would be operated by remote control from above ground, but the operations would be far more complicated than in the case of the pile. However, as far as the chemical operations themselves were concerned, their general nature was not so far removed from the normal fields of activity of the chemists involved.

### Analytical Control

7.34. In the first stages of the separation process even the routine analysis of samples which was necessary in checking the operation of the various chemical processes had to be done by remote control. Such testing was facilitated, however, by use of radioactive methods of analysis as well as conventional chemical analyses.

### Waste Disposal

7.35. The raw material (uranium) is not dangerously radioactive. The desired product (plutonium) does not give off penetrating radiation, but the combination of its alpha-ray activity and chemical properties make it one of the most dangerous substances known if it once gets into the body. However, the really troublesome materials are the fission products, i.e., the major fragments into which uranium is split by fission. The fission products are extremely active and include some thirty elements. Among them are radioactive xenon and radioactive iodine. These are released in considerable quantity when the slugs are dissolved and must be disposed of with special care. High stacks must be built which will carry off these gases along with the acid fumes from the first dissolving unit, and it must be established that the mixing of the radioactive gases with the atmosphere will not endanger the surrounding territory.

7.36. Most of the other fission products can be retained in solution but must eventually be disposed of. Of course, possible pollution of the adjacent river must be considered.

### Recovery of Uranium

7.37. Evidently, even if the uranium were left in the pile until all the U-235 had undergone fission, there would still be a large amount of U-238 which had not been converted to plutonium. Actually the process is stopped long before this stage is reached. Uranium is an expensive material and the total available supply is seriously limited. Therefore, the possibility of recovering it after the plutonium is separated must be considered. Originally there was no plan for early recovery, but merely the intention of storing the uranium solution. Later, methods of large-scale recovery were developed.

### Corrosion in the Separation Plant

7.38. An unusual feature of the chemical processes involved was that these processes occur in the presence of a high density of radiation. Therefore the containers used may corrode more rapidly than they would under normal circumstances. Furthermore, any such corrosion will be serious because of the difficulty of access. For a long time, information was sadly lacking on these dangers.

### Effect of Radiation on Chemical Reactions

7.39. The chemical reactions proposed for an extraction process were, of course, tested in the laboratory. However, they could not be tested with appreciable amounts of plutonium nor could they be tested in the presence of radiation of anything like the expected intensity. Therefore it was realized that a process found to be successful in the laboratory might not work in the plant.

### Choice of Process

7.40. The description given above as to what was to happen in the successive chambers in the canyon was very vague. This was necessarily so, since even by January 1943 no decision had been made as to what process would be used for the extraction and purification of plutonium. The major problem before the Chemistry Division of the Metallurgical Laboratory was the selection of the best process for the plant.

### The Health Problem

7.41. Besides the hazards normally present

(Please Turn to Next Page)



## Development of Atomic Bomb (Continued from Preceding Page)

during construction and operation of a large chemical plant, dangers of a new kind were expected here. Two types of radiation hazard were anticipated—neutrons generated in the pile, and alpha-particles, beta-particles, and gamma rays emitted by products of the pile. Although the general effects of these radiations had been proved to be similar to those of X-rays, very little detailed knowledge was available. Obviously the amounts of radioactive material to be handled were many times greater than had ever been encountered before.

7.42. The health group had to plan three programs: (1) provision of instruments and clinical tests to detect any evidence of dangerous exposure of the personnel; (2) research on the effects of radiation on persons, instruments, etc.; and (3) estimates of what shielding and safety measures must be incorporated in the design and plan of operation of the plant.

### The Properties of Plutonium

7.43. Although we were embarking on a major enterprise to produce plutonium, we still had less than a milligram to study and still had only limited familiarity with its properties. The study of plutonium, therefore, remained a major problem of the Metallurgical Laboratory.

### The Training of Operators

7.44. Evidently the operation of a full-scale plant of the type planned would require a large and highly skilled group of operators. Although du Pont had a tremendous background of experience in the operation of various kinds of chemical plant, this was something new and it was evident that operating personnel would need special training. Such training was carried out partly in Chicago and its environs, but principally at the Clinton Laboratories.

### The Need for Further Information

7.45. In the preceding paragraphs of this chapter we have outlined the problems confronting the group charged with designing and building a plutonium production plant. In Chapter VI the progress in this field up to the end of 1942 was reviewed. Throughout these chapters it is made clear that a great deal more information was required to assure the success of the plant. Such answers as had been obtained to most of the questions were only tentative. Consequently research had to be pushed simultaneously with planning and construction.

### The Research Program

7.46. To meet the need for further information, research programs were laid out for the Metallurgical Laboratory and the Clinton Laboratory. The following passage is an excerpt from the 1943 program of the Metallurgical Project:

**Product Production Studies**—These include all aspects of the research, development and semi-works studies necessary for the design, construction, and operation of chain-reacting piles to produce plutonium or other materials.

**Pile Characteristics**—Theoretical studies and experiments on lattice structures to predict behavior in high-level piles, such as temperature and barometric effects, neutron characteristics, pile poisoning, etc.

**Control of Reacting Units**—Design and experimental tests of devices for controlling rate of reaction in piles.

**Cooling of Reacting Units**—Physical studies of coolant material, engineering problems of circulation, corrosion, erosion, etc.

**Instrumentation**—Development of instruments and technique for monitoring pile and surveying radiation throughout plant area.

**Protection**—Shielding, biological effects of radiation at pile and clinical effects of operations associated with pile.

**Materials**—Study of physical (mechanical and nuclear) properties of construction and process materials used in pile construction and operation.

**Activation Investigations**—Production of experimental amounts of radioactive materials in cyclotron and in piles and study of activation of materials by neutrons, protons, electrons, gamma-rays, etc.

**Pile Operation**—Study of pile operation procedures such as materials handling, instrument operation, etc.

**Process Design**—Study of possible production processes as a whole leading to detailed work in other categories.

**Product Recovery Studies**—These include all aspects of the work necessary for the development of processes for the extraction of plutonium and possible by-products from the pile material and their preparation in purified form. Major effort at the Metallurgical Laboratory will be on a single process to be selected by 1 June 1943 for the production of plutonium, but alternatives will continue to be studied both at the Metallurgical Laboratory and Clinton with whatever manpower is available.

**Separation**—Processes for solution of uranium, extraction of plutonium and decontamination by removal of fission products.

**Concentration, Purification and Product Reduction**—Processes leading to production of plutonium as pure metal, and study of properties of plutonium necessary to its production.

**Wastes**—Disposal and possible methods of recovery of fission products and metal from wastes.

**Instrumentation**—Development and testing of instruments for monitoring chemical processes and surveying radiation throughout the area.

**Protection**—Shielding studies, determination of biological effects of radioactive dusts, liquids, solids, and other process materials, and protective measures.

**Materials**—Corrosion of equipment materials, and radiation stability. Necessary purity and purity analysis of process materials, etc.

**Recovery of Activated Materials**—Development of methods and actual recovery of activated material (tracers, etc.) from cyclotron and pile-activated materials.

**Operations Studies**—Equipment performance, process control, material handling operations, etc.

**Process Design**—Study of product recovery processes as a whole (wet processes, physical methods) leading to detailed work in other categories.

**Fundamental Research**—Studies of the fundamental physical, chemical and biological phenomena occurring in chain-reacting piles, and basic properties of all materials involved. Although the primary emphasis at Clinton is on the semi-works level, much fundamental research will require Clinton conditions (high radiation intensity, large scale processes).

**Nuclear Physics**—Fundamental properties of nuclear fission such as cross section, neutron yield, fission species, etc. Other nuclear properties important to processes, such as cross sections, properties of moderators, neutron effect on materials, etc.

(Please Turn to Next Page)

# Formula for MEYER INSIGNIA

Master Craftsmen and Precious Metals



1 **SCULPTOR**—From Regulations, the artist designs the new insignia, sculpturing a model in clay.



2 **DIE-CUTTER**—Meyer die-cutters fashion the dies, employing their experience of 77 years in making insignia dies.



3 **TOOL-MAKER**—Meyer tool-makers create the tools, paying infinite attention to the details that make for dependable insignia.



4 **PRECIOUS METAL**—Rolled Gold Plate is the raw material used in making "Rolled Gold" insignia. This metal is hard and wear-resistant. (Drawing courtesy of Rolled Gold Plate Manufacturers.)



5 **MACHINES**—The insignia is struck from the rolled gold plate. All insignia manufacturers buy rolled gold plate. N. S. Meyer, Inc. use only the finest.



6 **HAND FINISH**—After 23 operations, hand burnishing adds the touch that makes the Meyer Cap Device attractive as well as durable.



**YOUR INSIGNIA**  
The finished insignia is put in the distinctive blue Meyer box.

**N.S. MEYER, INC.**

NEW YORK



No curative power is claimed  
for PHILIP MORRIS  
**BUT—**  
**AN OUNCE OF  
PREVENTION IS  
WORTH A POUND OF CURE!**



**PHILIP MORRIS** is the cigarette scientifically proved far less irritating to the smoker's nose and throat!

**CALL FOR PHILIP MORRIS**  
America's Finest Cigarette



## Development of Atomic Bomb (Continued from Preceding Page)

**General Physics**—Basic instrument (electron, ionization, optical, etc.) research, atomic mass determinations, neutron,  $\alpha$ ,  $\beta$ ,  $\gamma$  radiation studies, X-ray investigations, etc.

**Radiation Chemistry**—Effects of radiation on chemical processes and chemical reactions produced by radiation.

**Nuclear Chemistry**—Tracing of fission products, disintegration constants, chains, investigation of nuclei of possible use to project.

**Product Chemistry**—Chemical properties of various products and basic studies in separation and purification of products.

**General Chemistry**—Chemistry of primary materials and materials associated with processes, including by-products.

**General Biology**—Fundamental studies of effects of radiation on living matter, metabolism of important materials, etc.

**Clinical Investigations**—Basic investigations, such as hematology, pathology, etc.

**Metallurgical Studies**—Properties of U, Pu, Be, etc.

**Engineering Studies**—Phenomena basic to corrosion and similar studies essential to continued engineering development of processes.

7.47. An examination of this program gives an idea of the great range of investigations which were considered likely to give relevant information. Many of the topics listed are not specific research problems such as might be solved by a small team of scientists working for a few months but are whole fields of investigation that might be studied with profit for years. It was necessary to pick the specific problems that were likely to give the most immediately useful results but at the same time it was desirable to try to uncover general principles. For example, the effect of radiation on the properties of materials ("radiation stability") was almost entirely unknown. It was necessary both to make empirical tests on particular materials that might be used in a pile and to devise general theories of the observed effects. Every effort was made to relate all work to the general objective: a successful production plant.

### Organization of the Project

7.48. There have been many changes in the organization and personnel of the project. During most of the period of construction at Clinton and Hanford, A. H. Compton was Director of the Metallurgical Project; S. K. Allison was Director of the Metallurgical Laboratory at Chicago; and M. D. Whitaker was Director of the Clinton Laboratory. The Chicago group was organized in four divisions: physics, chemistry, technology, and health. Later the physics division was split into general physics and nuclear physics. R. L. Doan was research director at Clinton but there was no corresponding position at Chicago. Among others who have been associate or assistant laboratory or project directors or have been division directors are S. T. Cantrell, C. M. Cooper, F. Daniels, A. J. Dempster, E. Fermi, J. Franck, N. Hilberry, T. R. Hogness, W. C. Johnson, H. D. Smyth, J. C. Stearns, R. S. Stone, H. C. Vernon, W. W. Watson and E. Wigner.

7.49. It was the responsibility of these men to see that the research program described above was carried out and that significant results were reported to du Pont. It was their responsibility also to answer questions raised by du Pont and to approve or criticize plans submitted by du Pont.

### Cooperation Between the Metallurgical Laboratory and du Pont

7.50. Since du Pont was the design and construction organization and the Metallurgical Laboratory was the research organization, it was obvious that close cooperation was essential. Not only did du Pont need answers to specific questions, but they could benefit by criticism and suggestions on the many points where the Metallurgical group was especially well-informed. Similarly, the Metallurgical group could profit by the knowledge of du Pont on many technical questions of design, construction, and operation. To promote this kind of cooperation du Pont stationed one of their physicists, J. B. Miles, at Chicago, and had many other du Pont men, particularly C. H. Greenewalt, spend much of their time at Chicago. Miles and Greenewalt regularly attended meetings of the Laboratory Council. There was no similar reciprocal arrangement although many members of the laboratory visited Wilmington informally. In addition, J. A. Wheeler was transferred from Chicago to Wilmington and became a member of the du Pont staff. There was, of course, constant exchange of reports and letters, and conferences were held frequently between Compton and R. Williams of du Pont. Whitaker spent much of his time at Wilmington during the period when the Clinton plant was being designed and constructed.

### Summary

7.51. By January, 1943, the decision had been made to build a plutonium production plant with a large capacity. This meant a pile developing thousands of kilowatts and a chemical separation plant to extract the product. The du Pont Company was to design, construct, and operate the plant; the

Metallurgical Laboratory was to do the necessary research. A site was chosen on the Columbia River at Hanford, Washington. A tentative decision to build a helium-cooled plant was reversed in favor of water-cooling. The principal problems were those involving lattice design, loading and unloading, choice of materials particularly with reference to corrosion and radiation, water supply, controls and instrumentation, health hazards, chemical separation process, and design of the separation plant. Plans were made for the necessary fundamental and technical research and for the training of operators. Arrangements were made for liaison between du Pont and the Metallurgical Laboratory.

### CHAPTER VIII

#### THE PLUTONIUM PROBLEM JANUARY 1943 TO JUNE 1945

##### Introduction

8.1. The necessity for pushing the design and construction of the full-scale plutonium plant simultaneously with research and development inevitably led to a certain amount of confusion and inefficiency. It became essential to investigate many alternative processes. It became necessary to investigate all possible causes of failure even when the probability of their becoming serious was very small. Now that the Hanford plant is producing plutonium successfully, we believe it is fair to say that a large percentage of the results of investigation made between the end of 1942 and the end of 1944 will never be used—at least not for the originally intended purposes. Nevertheless had the Hanford plant run into difficulties, any one of the now superfluous investigations might have furnished just the information required to convert failure into success. Even now it is possible to say that future improvements may not depend on the results of researches that seem unimportant today.

8.2. It is estimated that thirty volumes will be required for a complete report of the significant results of researches conducted under the auspices of the Metallurgical Project. Work was done on every item mentioned on the research program presented in the last chapter. In the present account it would be obviously impossible to give more than a brief abstract of all these researches. We believe this would be unsatisfactory and that it is preferable to give a general discussion of the chain-reacting units and separation plants as they now operate, with some discussion of the earlier developments.

##### The Chain Reaction in a Pile

8.3. In Chapter I and other early chapters we have given brief accounts of the fission process, pile operation, and chemical separation. We shall now review these topics from a somewhat different point of view before describing the plutonium production plants themselves.

8.4. The operation of a pile depends on the passage of neutrons through matter and on the nature of the collisions of neutrons with the nuclei encountered. The collisions of principal importance are the following:

I. Collisions in which neutrons are scattered and lose appreciable amounts of energy.

(a) Inelastic collisions of fast neutrons with uranium nuclei.

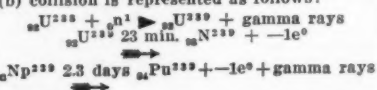
(b) Elastic collisions of fast or moderately fast neutrons with the light nuclei of the moderator material; these collisions serve to reduce the neutron energy to very low (so-called thermal) energies.

II. Collisions in which the neutrons are absorbed.

(a) Collisions which result in fission of nuclei and give fission products and additional neutrons.

(b) Collisions which result in the formation of new nuclei which subsequently disintegrate radioactively (e.g.,  ${}^{239}\text{Pu}$  which produces  ${}^{239}\text{Pu}$ ).

8.5. Only the second class of collision requires further discussion. As regards collisions of type II (a), the most important in a pile are the collisions between neutrons and U-235, but the high-energy fission of U-238 and the thermal fission of Pu-239 also take place. Collisions of type II (b) are chiefly those between neutrons and U-238. Such collisions occur for neutrons of all energies, but they are most likely to occur for neutrons whose energies lie in the "resonance" region located somewhat above thermal energies. The sequence of results of the type II (b) collision is represented as follows:



8.6. Any other non-fission absorption processes are important chiefly because they waste neutrons; they occur in the moderator, in U-235, in the coolant, in the impurities originally present, in the fission products, and even in plutonium itself.

8.7. Since the object of the chain reaction is to generate plutonium, we would like to absorb all excess neutrons in U-238, leaving just enough neutrons to produce fission and thus to maintain the chain reaction. Actually the tendency of the neutrons to be absorbed by the dominant isotope U-238 is so great compared to their tendency to produce fission in the 140-times-rarer U-235 that the principal design effort had to be directed toward favor-

ing the fission (as by using a moderator, a suitable lattice, materials of high purity, etc.) in order to maintain the chain reaction.

##### Life History of One Generation of Neutrons

8.8. All the chain-reacting piles designed by the Metallurgical Laboratory or with its cooperation consist of four categories of material—the uranium metal, the moderator, the coolant, and the auxiliary materials such as water tubes, casings of uranium, control strips or rods, impurities, etc. All the piles depend on stray neutrons from spontaneous fission or cosmic rays to initiate the reaction.

8.9. Suppose that the pile were to be started by simultaneous release (in the uranium metal) of  $N$  high-energy neutrons. Most of these neutrons originally have energies above the threshold energy of fission of U-238. However, as the neutrons pass back and forth in the metal and moderator, they suffer numerous inelastic collisions with the uranium and numerous elastic collisions with the moderator, and all these collisions serve to reduce the energies below that threshold. Specifically, in a typical graphite-moderated pile a neutron that has escaped from the uranium into the graphite travels on the average about 2.5 cm between collisions and makes on the average about 200 elastic collisions before passing from the graphite back into the uranium. Since at each such collision a neutron loses on the average about one-sixth of its energy, a one Mev neutron is reduced to thermal energy (usually taken to be 0.025 electron volt) considerably before completing a single transit through the graphite. There are, of course, many neutrons that depart from this average behavior, and there will be enough fissions produced by fast neutrons to enhance slightly the number of neutrons present. The enhancement may be taken into account by multiplying the original number of neutrons  $N$  by a factor  $\epsilon$  which is called the fast-fission effect or the fast multiplication factor.

8.10. As the average energy of the  $N\epsilon$  neutrons present continues to fall, inelastic collision in the uranium becomes unimportant, the energy being reduced essentially only in the moderator. However, the chance of non-fission absorption (resonance capture) in U-238 becomes significant as the intermediate or resonance energy region is reached. Actually quite a number of neutrons in this energy region will be absorbed regardless of choice of lattice design. The effect of such capture may be expressed by multiplying  $N\epsilon$  by a factor  $p$ , (which is always less than one) called the "resonance escape probability" which is the probability that a given neutron starting with energy above the resonance region will reach thermal energies without absorption in U-238. Thus from the original  $N$  high-energy neutrons we obtain  $Np\epsilon$  neutrons of thermal energy.

8.11. Once a neutron has reached thermal energy the chance of its losing more energy by collision is no greater than the chance of its gaining energy. Consequently the neutrons will remain at this average energy until they are absorbed. In the thermal-energy region the chance for absorption of the neutron by the moderator, the coolant and the auxiliary materials is greater than at higher energies. At any rate it is found that we introduce little error into our calculations by assuming all such unwanted absorption takes place in this energy region. We now introduce a factor  $f$ , called the thermal utilization factor, which is defined as the probability that a given thermal neutron will be absorbed in the uranium. Thus from the original  $N$  fast neutrons we have obtained  $Np\epsilon f$  thermal neutrons which are absorbed by uranium.

8.12. Although there are several ways in which the normal mixture of uranium isotopes can absorb neutrons, the reader may recall that we defined in a previous chapter a quantity  $\eta$ , which is the number of fission neutrons produced for each thermal neutron absorbed in uranium regardless of the details of the process. If, therefore, we multiply the number of thermal neutrons absorbed in uranium,  $Np\epsilon f$ , by  $\eta$ , we have the number of new high-speed neutrons generated by the original  $N$  high-speed neutrons in the course of their lives. If  $Np\epsilon f\eta$  is greater than  $N$ , we have a chain reaction and the number of neutrons is continually increasing. Evidently the product  $\epsilon p f \eta = k$ , the multiplication factor already defined in Chapter IV.

8.13. Note that no mention has been made of neutrons escaping from the pile. Such mention has been deliberately avoided since the value of  $k$  as defined above applies to an infinite lattice. From the known values of  $k$  and the fact that these piles do operate, one finds that the percentage of neutrons escaping cannot be very great. As we saw in Chapter II, the escape of neutrons becomes relatively less important as the size of the pile increases. If it is necessary to introduce in the pile a large amount of auxiliary material such as cooling-system pipes, it is necessary to build a somewhat larger pile to counteract the increase in absorption.

8.14. To sum up, a pile operates by reducing high-energy neutrons to thermal energies by the use of a moderator-lattice arrangement, then allowing the thermal-energy neutrons to be absorbed by uranium, causing fis-

sion which regenerates further high-energy neutrons. The regeneration of neutrons is aided slightly by the fast neutron effect; it is impeded by resonance absorption during the process of energy reduction, by absorption in graphite and other materials, and by neutron escape.

##### The Effects of Reaction Products on the Multiplication Factor

8.15. Even at the high power level used in the Hanford piles, only a few grams of U-238 and of U-235 are used up per day per million grams of uranium present. Nevertheless the effects of these changes are very important. As the U-235 is becoming depleted, the concentration of plutonium is increasing. Fortunately, plutonium itself is fissionable by thermal neutrons and so tends to counterbalance the decrease of U-235 as far as maintaining the chain reaction is concerned. However, other fission products are being produced also. These consist typically of unstable and relatively unfamiliar nuclei so that it was originally impossible to predict how great an undesirable effect they would have on the multiplication constant. Such deleterious effects are called poisoning. In spite of a great deal of preliminary study of fission products, an unforeseen poisoning effect of this kind very nearly prevented operation of the Hanford piles, as we shall see later.

##### The Reaction Products and the Separation Problem

8.16. There are two main parts of the plutonium production process at Hanford: actual production in the pile, and separation of the plutonium from the uranium slugs in which it is formed. We turn now to a discussion of the second part, the separation process.

8.17. The uranium slugs containing plutonium also contain other elements resulting from the fission of U-235. When a U-235 nucleus undergoes fission, it emits one or more neutrons and splits into two fragments of comparable size and of total mass 235 or less. Apparently fission into precisely equal masses rarely occurs, the most abundant fragments being a fragment of mass number between 134 and 144 and a fragment of mass number between 100 and 90. Thus there are two groups of fission products: a heavy group with mass numbers extending approximately from 127 to 154, and a light group from approximately 115 to 83. These fission products are in the main unstable isotopes of the thirty or so known elements in these general ranges of mass number. Typically they decay by successive beta emissions accompanied by gamma radiation finally to form known stable nuclei. The half-lives of the various intermediate nuclei range from fractions of a second to a year or more; several of the important species have half-lives of the order of a month or so. About twenty different elements are present in significant concentration. The most abundant of these comprises slightly less than 10 percent of the aggregate.

8.18. In addition to radioactive fission products, U-239 and Np-239 (intermediate products in the formation of plutonium) are present in the pile and are radioactive. The concentrations of all these products begin to build up at the moment the pile starts operating. Eventually the rate of radioactive decay equals the rate of formation so that the concentrations become constant. For example, the number of atoms of U-239 produced per second is constant for a pile operating at a fixed power level. According to the laws of radioactive disintegration, the number of U-239 atoms disappearing per second is proportional to the number of such atoms present and is thus increasing during the first few minutes or hours after the pile is put into operation. Consequently there soon will be practically as many nuclei disintegrating each second as are formed each second. Equilibrium concentrations for other nuclei will be approached in similar manner, the equilibrium concentration being proportional to the rate of formation of the nucleus and to its half-life. Products which are stable or of extremely long half-life (e.g., plutonium) will steadily increase in concentration for a considerable time. When the pile is stopped, the radioactivity of course continues, but at a continually diminishing absolute rate. Isotopes of very short half-life may "drop out of sight" in a few minutes or hours; others of longer half-life keep appreciably active for days or months. Thus at any time the concentrations of the various products in a recently stopped pile depend on what the power level was, on how long the pile ran, and on how long it has been shut down. Of course, the longer the pile has run, the larger is the concentration of plutonium and (unfortunately) the larger is the concentration of long-lived fission products. The longer the "cooling" period, i.e., the period between removal of material from the pile and chemical treatment, the lower is the radiation intensity from the fission products. A compromise must be made between such considerations as the desire for a long running and cooling time on the one hand and the desire for early extraction of the plutonium on the other hand.

8.19. Tables can be prepared showing the chemical concentrations of plutonium and the various fission products as functions of power

(Please turn to Next Page)



## Development of Atomic Bomb (Continued from Preceding Page)

level, length of operation, and length of cooling period. The half life of the U-239 is so short that its concentration becomes negligible soon after the pile shuts down. The neptunium becomes converted fairly rapidly to plutonium. Of course, the total weight of fission products, stable and unstable, remains practically constant after the pile is stopped. For the Clinton and Hanford operating conditions the maximum plutonium concentration attained is so small as to add materially to the difficulty of chemical separation.

### The Choice of a Chemical Separation Process

8.20. The problem then is to make a chemical separation at the daily rate of, say, several grams of plutonium from several thousand grams of uranium contaminated with large amounts of dangerously radioactive fission products comprising twenty different elements. The problem is especially difficult as the plutonium purity requirements are very high indeed.

8.21. Four types of method for chemical separation were examined: volatility, absorption, solvent extraction, and precipitation. The work on absorption and solvent extraction methods has been extensive and such methods may be increasingly used in the main process or in waste recovery, but the Hanford plant was designed for a precipitation process.

8.22. \* The phenomena of co-precipitation, i.e., the precipitation of small concentrations of one element along with a "carrier" precipitate of some other element, had been commonly used in radioactive chemistry, and was adopted for plutonium separation. The early work on plutonium chemistry, confined as it was to minute amounts of the element, made great use of precipitation reactions from which solubility properties could be deduced. It was therefore natural that precipitation methods of separation were the most advanced at the time when the plant design was started. It was felt that, should the several steps in the separations process have to be developed partly by the empirical approach, there would be less risk in the scale-up of a precipitation process than, for example, of one involving solid-phase reactions. In addition, the precipitation processes then in mind could be broken into a sequence of repeated operations (called cycles), thereby limiting the number of different equipment pieces requiring design and allowing considerable process change without equipment change. Thus, while the basic plant design was made with one method in mind, the final choice of a different method led to no embarrassment.

8.23. Most of the precipitation processes which have received serious consideration made use of an alternation between the (IV) and (VI) oxidation states of plutonium. Such processes involve a precipitation of plutonium (IV) with a certain compound as a carrier, then dissolution of the precipitate, oxidation of the plutonium to the (VI) state, and reprecipitation of the carrier compound while the plutonium (VI) remains in solution. Fission products which are not carried by these compounds remain in solution when plutonium (IV) is precipitated. The fission products which carry are removed from the plutonium when it is in the (VI) state. Success-

\* Paragraphs 8.22-8.26 are quoted or paraphrased from a general report of the Metallurgical Laboratory prepared in the spring of 1945.

sive oxidation-reduction cycles are carried out until the desired decontamination is achieved. (The process of elimination of the fission products is called decontamination and the degree of elimination is tested by measuring the change in radioactivity of the material.)

### Combination Processes

8.24. It is possible to combine or couple the various types of process. Some advantages may be gained in this way since one type of process may supplement another. For example, a process which gives good decontamination might be combined advantageously with one which, while inefficient for decontamination, would be very efficient for separation from uranium.

8.25. At the time when it became necessary to decide on the process to serve as the basis for the design of the Hanford plant (June, 1943), the choice, for reasons given above, was limited to precipitation processes and clearly lay between two such processes. However, the process as finally chosen actually represented a combination of the two.

8.26. The success of the separation process at Hanford has exceeded all expectations. The high yields and decontamination factors and the relative ease of operation have amply demonstrated the wisdom of its choice as a process. This choice was based on a knowledge of plutonium chemistry which had been gleaned from less than a milligram of plutonium. Further developments may make the present Hanford process obsolete, but the principal goal, which was to have a workable and efficient process for use as soon as the Hanford piles were delivering plutonium, has been attained.

### The Argonne Laboratory

8.27. The Argonne Laboratory was constructed early in 1943 outside Chicago. The site originally intended for a pilot plant, was later considered to be too near the city and was used for reconstructing the so-called West Stands pile which was originally built on the University of Chicago grounds and which was certainly innocuous. Under the direction of E. Fermi and his colleagues, H. L. Anderson, W. H. Zinn, G. Weil and others, this pile has served as a prototype unit for studies of thermal stability, controls, instruments, and shielding, and as a neutron source for materials testing and neutron-physics studies. Furthermore, it has proved valuable as a training school for plant operators. More recently a heavy-water pile (see below) has been constructed there.

8.28. The first Argonne pile, a graphite-uranium pile, need not be described in detail. The materials and lattice structure are nearly identical to those which were used for the original West Stands pile. The pile is a cube; it is surrounded by a shield and has controls and safety devices somewhat similar to those used later at Clinton. It has no cooling system and is normally run at a power level of only a few kilowatts. It has occasionally been run at high-power levels for very brief periods. Considering that it is merely a reconstruction of the first chain-reacting unit ever built, it is amazing that it has continued in operation for more than two years without developing any major troubles.

8.29. One of the most valuable uses of the Argonne pile has been the measurement of neutron-absorption cross sections of a great variety of elements which might be used in piles as structural members, etc., or which might be present in pile materials as impurities. These measurements are made by observing the change in the controls necessary to make  $k_{eff}$  equal to 1.00 when a known

amount of the substance under study is inserted at a definite position in the pile. The results obtained were usually expressed in terms of "danger" coefficients.

8.30. An opening at the top of the pile lets out a very uniform beam of thermal neutrons that can be used for exponential-pile experiments, for direct measurements of absorption cross sections, for Wilson cloud chamber studies, etc.

8.31. An interesting phenomenon occurring at the top of the pile is the production of a beam or flow of "cold" neutrons. If a sufficient amount of graphite is interposed between the upper surface of the pile and an observation point a few yards above, the neutron energy distribution is found to correspond to a temperature much lower than that of the graphite. This is presumed to be the result of a preferential transmission by the (crystalline) graphite of the slowest ("coldest") neutrons, whose quantum-mechanical wave-length is great compared to the distance between successive planes in the graphite crystals.

8.32. More recently a pile using heavy water as moderator was constructed in the Argonne Laboratory. The very high intensity beam of neutrons produced by this pile has been found well-suited to the study of "neutron optics", e.g., reflection and refraction of neutron beams as by graphite.

8.33. A constant objective of the Argonne Laboratory has been a better understanding of nuclear processes in uranium, neptunium, and plutonium. Repeated experiments have been made to improve the accuracy of constants such as thermal-fission cross sections of U-235, U-238, and Pu-239, probabilities of non-fission neutron absorption by each of these nuclei, and number of neutrons emitted per fission.

### The Clinton Plant

8.34. In Chapter VI I mentioned plans for a "pilot" plant for production of plutonium to be built at the Clinton site in Tennessee. By January 1943, the plans for this project were well along; construction was started soon afterward. M. D. Whitaker was appointed director of the Clinton Laboratories. The pilot-plant plans were made cooperatively by du Pont and the Metallurgical Laboratory; construction was carried out by du Pont; plant operation was maintained by the University of Chicago as part of the Metallurgical Project.

8.35. The main purposes of the Clinton plant were to produce some plutonium and to serve as a pilot plant for chemical separation. As regards research, the emphasis at Clinton was on chemistry and biological effects of radiations. A large laboratory was provided for chemical analysis, for research on purification methods, for fission-product studies, for development of intermediate-scale extraction and decontamination processes, etc. Later a "hot laboratory", i.e., a laboratory for remotely-controlled work on highly radioactive material, was provided. There is also an instrument shop and laboratory that has been used very actively. There are facilities for both clinical and experimental work of the health division, which has been very active. There is a small physics laboratory in which some important work was done using higher neutron intensities than were available at the Argonne Laboratory. The principal installations constructed at the Clinton Laboratory site were the pile and the separation plant; these are briefly described below.

### The Clinton Pile

8.36. In any steadily operating pile the ef-

fective multiplication factor  $k$  must be kept at one, whatever the power level. The best  $k$  that had been observed in a uranium-graphite lattice could not be achieved in a practical pile because of neutron leakage, cooling system, cylindrical channels for the uranium, protective coating on the uranium, and other minor factors. Granted air-cooling and a maximum safe temperature for the surface of the uranium, a size of pile had to be chosen that could produce 1,000 kw. The effective  $k$  would go down with rising temperature but not sufficiently to be a determining factor. Though a sphere was the ideal shape, practical considerations recommended a rectangular block.

8.37. The Clinton pile consists of a cube of graphite containing horizontal channels filled with uranium. The uranium is in the form of metal cylinders protected by gas-tight casings of aluminum. The uranium cylinders or slugs may be slid into the channels in the graphite; space is left to permit cooling air to flow past, and to permit pushing the slugs out at the back of the pile when they are ready for processing. Besides the channels for slugs there are various other holes through the pile for control rods, instruments, etc.

8.38. The Clinton pile was considerably larger than the first pile at Chicago (see Chapter VI). More important than the increased size of the Clinton pile were its cooling system, heavier shields, and means for changing the slugs. The production goal of the Clinton plant was set at a figure which meant that the pile should operate at a power level of 1,000 kw.

8.39. The instrumentation and controls are identical in principle to those of the first pile. Neutron intensity in the pile is measured by a BF<sub>3</sub> ionization chamber and is controlled by boron steel rods that can be moved in and out of the pile, thereby varying the fraction of neutrons available to produce fission.

8.40. In spite of impressiveness of the array of instruments and safety devices, the most striking feature of the pile is the simplicity of operation. Most of the time the operators have nothing to do except record the readings of various instruments.

### The Separation Plant

8.41. Here, as at Hanford, the plutonium processes have to be carried out by remote control and behind thick shields. The separation equipment is housed in a series of ad-

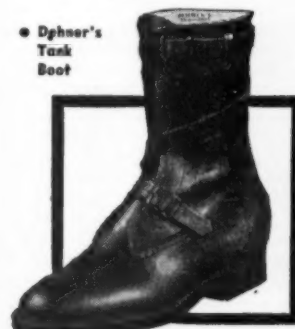
(Please turn to Page 139)



## DEHNER BOOTS

FAVORED BY ALL BRANCHES  
OF THE ARMED SERVICES

• Dghner's  
Tank  
Boot



The Dehner Line . . . Custom  
made for the Armed Personnel

- Tank Boot
- Jodhpur Boot
- Jodhpur Oxford
- Wellington Boot
- Cavalry Dress Boot
- Cavalry Field Boot

—From GERMANY

"I purchased my first pair of Dehner's Boots in the summer of 1942 at Camp Polk. Since that time I have never been without your brand of boots, because, in my estimation, there are none more comfortable and serviceable manufactured. After over a year of combat wear my last pair of boots is slowly wearing out."

The DEHNER CO., Inc.  
2057 Forsum Omaha 2, Nebr.



TRY BRUSHLESS  
BURMA-SHAVE

Slips the fuzzle  
off your muzzle

Burma-Shave

tube  
or jar



## SERVICE NEWS AND GOSSIP

► **FOREIGN AFFAIRS.** The full confidence President Truman has in General of the Army MacArthur's ability to administer Japan in accordance with the Potsdam surrender ultimatum, again was indicated this week by statements he authorized for publication. With a different viewpoint on the Japanese situation than that he and the locally informed Supreme Commander have, the State and War Departments have criticized the announcement of the latter that our occupation forces, unless unforeseen factors should arise, would probably not number more than 200 thousand men, all of whom would be Regulars. Speaking for the former, and inferentially expressing the views of the latter Department, Under-Secretary of State Acheson implied that General MacArthur was attempting to modify the policy which our Government and those of the other United Nations had determined upon for Japan, and he gave notice that whatever it takes to carry out that policy will be used to carry it out. As a result of Mr. Acheson's criticism of General MacArthur the Senate voted to postpone his nomination as Under Secretary of State.

It is obvious from Mr. Acheson's attitude that he is anxious for the international effect, particularly in connection with the negotiations for the world settlements which the Council of Foreign Ministers is conducting in London, that the United States shall continue powerful, and be represented by strength in the conquered countries. The point is being made that if General MacArthur can control 70 million Japanese with 200 thousand men, there must be some other reason than the maintenance of order for the retention of 400 thousand men in our zone in Germany, with one-fifth of that number of inhabitants. From the point of view of China, domination of Japan by a huge American force over a long period of time would assure the development and preservation of stability in the Far East, and from that of Great Britain, anxious even more than our own people for demobilization, continuance of a powerful American Army in Europe would relieve her situation, serve as a balance to Russia, and tend to curb expression of the ambitious designs of France, Yugo-Slavia and other smaller States. It follows that Mr. Acheson feels he was justified by high policy in suggesting that before making his announcement, General MacArthur should have consulted Washington, and especially the Joint Chiefs of Staff, and that body, the Combined Chiefs of Staff.

Yet the authority originally given General MacArthur by the President and the British and Russian Chiefs, specifically empowered him to handle Japan necessarily within the prescription of the Potsdam ultimatum, and careful analysis of the announcement he issued shows complete accord with it. It was this analysis that caused the President, in spite of the objection of the State and War Departments, to tell a Press Conference that he accepted General MacArthur's view of the strength we should maintain in Japan, and that he was glad it could be made so small. That strength was based upon a careful estimate of all factors in the situation, including the manner in which the Emperor and the Imperial Government and people are complying and may be expected to comply with the orders given. General MacArthur did not say that the Occupation Force was to be reduced immediately to 200 thousand, rather that unless unforeseen events should occur, that maximum would be established "within six months." In a formal statement issued by the President, he declared we would not really face the problem of the size or makeup of the occupation forces until next Spring, which is precisely the six months period fixed by General MacArthur. The President said further that the speed of demobilization will not be governed by our occupation needs, and undoubtedly to reassure our Allies and to smooth the ruffled feathers of State and War officials, that "America is going to keep the full strength she needs for her national commitments," and that the rest of the men are coming back home and coming as fast as the Services can get them out. This, also, accords with the position of General MacArthur. The final paragraph of the latter's announcement stated that the strength of our Occupation Force was entirely independent of the question of the future of the Japanese politico-governmental structure on a national and international plane, which would have to be determined upon the highest diplomatic level of the United Nations—the President, Prime Minister Attlee and Marshal Stalin. In other words, to the Big Three properly was reserved this responsibility, and their decision, probably to be made at a conference, would be influenced, as the General stated, by the incidence of events in the near and proximate future. Thus he warned Japan that her conduct would importantly bear upon the decision of the United Nations, and that if she is to regain comparatively speedy independence, the government and people must continue to carry out with no hesitation or evasion, the terms which will be applied through specific orders. Our policy based upon those terms as Mr. Acheson explained, contemplates putting Japan in a position where she cannot renew aggressive warfare. That this is underway is shown by the annihilation of the Japanese Navy by our own sea and air forces; seizure of all planes; disarmament which is progressing; complete demobilization which is occurring and abolition of the High Command and General Staff and of schools for war instruction. Mr. Acheson further called for changes in the present economic and social systems of the country so that the will to war would not continue, and in connection therewith, General MacArthur has disbanded patriotic societies, moved to eliminate all war making machinery, and censored Japanese broadcasting and newspapers, and by the arrest and forthcoming trials of the war criminals is impressing upon the people the fact that war does not pay. Those who know Japan say that General MacArthur by his stern attitude and also by the hope of independence implied in the reduction of the strength of the Occupation Force, has displayed high statesmanship, which will make for full acceptance of all the demands of the United Nations with the least friction.

In order to dissipate Korean fears based upon General Hodge's proposal temporarily to use Japanese officials for Administrative purposes, the President pledged anew this week that ultimately complete independence will be granted to the country. At the same time as Acting Governor General of Korea, Maj. Gen. Archibald V. Arnold, Commanding General of the 7th Division, promptly revoked Japanese laws denying to the Koreans the rights of freedom of speech and of the press, of religion, and of political activity, and substituted Korean policemen for Japanese. The Navy as well as the military, expanded their occupation to bases and strategic points. Because of the action of Russian aviators in shooting down an American fortress, General MacArthur demanded and received an apology. The incident is regretted in Moscow and Washington, but it is regarded as, perhaps, notice by the Soviets that American observers are no more wanted in the region of Korea controlled by them than they are in the Balkans. However, as Supreme Commander, it is felt that General MacArthur will insist that our rights in connection with all of Korea must be respected, and that no further attacks shall be made upon our planes.

Aside from the question of Japan, the picture of the post-war world has cleared sufficiently for one overall, predominant pattern to appear. It is the world economic situation. This is seen not merely in the current Anglo-American conversations in Washington on finance and trade. It is detected in the lines of policy running through the meeting of the Council of Foreign Ministers in London.

It is pointed up by the gentle hint dropped by Premier Stalin of Russian need for \$6 billions from us; by the plans of China to send an industrial mission here to devise ways of obtaining help from America; by the current conversations with Belgium over aid to that country, and by the prospect of many more such discussions with other countries.

It is reflected in the petroleum negotiations Secretary Ickes is conducting in London with special reference to the Middle East. It appears, in fact, in all quarters. Even Japan is beginning to yearn for American aid in rehabilitation. All look to the United States, and appear in no great haste to move in other directions until they know more surely their prospects here.

While it is true that at the meeting of the Council of Foreign Ministers Russian suggestions of Mediterranean and Red Sea ambitions have produced difficulties and delays, the deeper factor is that economic considerations in the background have applied brakes to progress to the point that it is probable the meeting will adjourn with its business turned over to subcommittees for survey and study and report at a later time. This is a familiar device for conferences when they must mark time if they are not to confess failure.

If they recess, will the foreign ministers reconvene before the Anglo-American aid conversations have been concluded and a formula taken up with Congress? That is to be doubted, for an answer to which way the world is headed in trade and business may well emerge from the current Washington conversations. And that is important to know when formulating political policy.

The Anglo-American conferees finally got down to business this week. Many, though not all, of our delegates feel strongly that something should be done to assist the United Kingdom over the reconversion hump. President Truman is represented as of that view. But all, including Lord Keynes, realize that the answer will be found in Congress. That means in the final analysis American public opinion. If the answer is in the negative, England asserts she may have no other recourse than to proceed with a partly closed, conceivably even a totalitarian system of economics, such as in the past has been credited to the Labor Party, notwithstanding pledges of liberal world trade policies in the Atlantic Charter.

The Allied recommendation for postponement of the Greek plebiscite comes as no surprise. Neither does Russian abstention from association with the United States, Britain and France in the supervision or observation of the election. But that abstention none the less is a jarring note and comes at a time when Moscow has practically told the others to keep hands off the Balkans while pressing claims for a position in Lybia and for Eritrea.

The preliminary moves now being made toward granting independence in some form to India were to be expected, once the Labor Party had risen to power in London. Based as they are upon the Cripps proposal for ultimate Dominion status for the Peninsula, it is certain there will be a resurgence of the conflict of opinion which heretofore has prevented solution of this imperial question.

To augment her naval forces in the Far East, Russia is asking that we transfer additional cruisers to her navy. China wants destroyers for coastal service. Probably some older ships will be given to these governments. The United States has given to China four destroyers and four submarines.

► **PAY AND TAXES.** In the Press this week were two items emphasizing the advisability of action in the interest of greater Service efficiency. One related to the preliminary steps being taken in the House of Representatives to increase the salaries of members of the two Chambers and to provide retired pay for those who have been in office a fixed number of terms. The other, originating in Moscow, announces a decree for the exemption of the Red Army from income taxes. This is the proposal consistently advocated by the ARMY AND NAVY JOURNAL for our own Establishments. In addition to the tax exemption, the Soviet Government has ordered that officers shall receive free and extra food and personal orderlies. Commenting upon this action, the *Red Star*, the Army's official Organ, stated that it was taken in order "to provide for our commanders the most favorable living conditions possible for the country." Thus the Soviet Government, with full appreciation of the value of the commissioned personnel based upon the bitter experience of war, is recognizing that military personnel cannot devote all its thought and energies to its profession unless it be relieved from financial worry and enjoy a high living standard through the supply of better food and personal service. Surely if the Soviet Government, so needy that it is asking the United States for a loan reported to be in the neighborhood of \$6 billions, can extend such consideration to its Army and Navy in order to promote their battle effectiveness, the United States with its far greater wealth, should do so to insure the same result. In the matter of the pay of Congress, the President, in his recent message, urged that it be doubled, which would more than take care of the contributions toward retirement that are contemplated. Agreeing that the cost of living justifies such action, it is at the same time evident that the same reason demands increase in the pay schedules of the Services, and compliance therewith, together with the new inducements provided for in the bill that has passed the House, will make attractive a professional career for the enlisted personnel as well. Important as are the duties of members of Congress, the country emerging from the greatest war in history, will appreciate the heavy responsibilities borne especially by the commissioned ranks which furnished leadership for victory. Confronted by the international problems still pressing for solution, and planning for Congressional action the strength and organizations it must maintain, it would seem that the Services should receive comparable pay recognition. In the light of these facts and developments, the Congressional Service Committees should move at once to revise active and retired pay schedules so as to make them comport at least with the rise in the cost of living and with the wise policy of the Soviet Union in exempting its military personnel from taxation. The inevitable result would be Services of high efficiency which would insure our defense and be able to contribute contingents to the World Peace Organization that would typify the power of America.

► **NAVY SHIPS.** USS *Minneapolis*: The heavy cruiser USS *Minneapolis* was torpedoed off Guadalcanal early in the Pacific war but later she participated in major invasions for 20 months in that theater without suffering any type of damage. Suicide planes and enemy fire came close to her on numerous occasions, but straight shooting saved the 11-year-old ship.

When the Japs hit Pearl Harbor the *Minneapolis* was in the Hawaiian area under command of Rear Adm. (then Capt.) Frank J. Lowry, USN. Rear Admiral Lowry



was relieved by Rear Adm. Charles E. Rosendahl on 12 September 1942.

On 1 May 1943 after the vessel had returned to Mare Island following the Tasafaronga Battle, Capt. (then Comdr.) Robert G. McCool, USN, assumed command. He was succeeded on 1 Aug. 1943 by Capt. Richard W. Bates, USN.

Capt. Harry B. Slocum, USN, took command 1 June 1944, and took the ship through the actions culminating in the Okinawa Operation. He was relieved on 1 July 1945 by the present Commanding Officer, Capt. Roy C. Hudson, USN.

**USS Pensacola:** Damage inflicted at Iwo Jima was repaired in time for the USS Pensacola, the Navy's oldest heavy cruiser and a veteran of nearly every major action in the Pacific War, to take her place in operations preceding the capitulation of Japan.

Hit six times by enemy shore batteries at Iwo, the cruiser made temporary repairs and participated in the assault against Okinawa before she returned to the United States for permanent repairs.

Seventeen men were killed and 120 wounded when Japanese shore batteries on Iwo Jima scored six hits and several near misses 17 Feb. 1945, two days before the landings on that volcanic island. The ship had bombarded the island five times previously from November, 1944, to January, 1945. Her salvos wrecked airfields and their facilities, gun positions, pillboxes and artillery emplacements.

Among the previous commanding officers of the Pensacola in World War II were Rear Adm. (then Capt.) Norman Scott, USN, and Capt. Randal E. Dees, USN.

**USS Converse:** The destroyer USS Converse salvaged a ship that had been abandoned and given up as lost and helped rescue its crew.

The salvaged ship was the high speed transport, USS Chase, severely damaged on 20 May, 1945, when a suicide plane crashed close aboard her starboard quarter and one or more bombs exploded underwater, breaching and flooding lower compartments, engine room and fireroom.

Commanding officer of the Converse was Lt. Comdr. E. H. McDowell, USN.

**YMS 50:** After surviving a score of hazardous operations in a Southwest Pacific cruise that began in 1943, the USS YMS 50 ran into fatal trouble on D-minus-13 day at Balikpapan when a mine exploded under the bow and Japanese shore batteries got her range—at almost the same moment.

Two officers and nine enlisted men were wounded when the 136-foot minesweeper was lost off the Norene invasion beach 18 June 1945.

The vessel, in company with other small vessels and supported by light cruisers, destroyers and high speed transports, was sweeping for acoustic and magnetic mines within a mile of the Jap-held beach when an explosion ripped open the bow.

According to the official Navy Department report the crew of the forward three-inch gun were scattered like ten pins and most of those wounded receive their injuries there. Two gunners were blown overboard but were able to swim back to the ship to be hauled aboard by shipmates.

Twenty-five minutes after the mine blast, the commanding officer, Lieut. (jg) Blake G. Stern, USNR, gave the order to abandon ship. Lt. Stern's nose was broken when he was thrown from the flying bridge to the gun deck by the explosion.

Other officers aboard the YMS 50 at the time of her loss were Lt. (jg) William C. Fechter, USNR, executive officer; Ensign James M. Klatt, USNR, Ensign William L. Lyon, USNR, engineering officer, and Ensign Robert D. Hawkins, USNR, communications officer, who was injured in the explosion.

**USS Quincy:** Holder of many first during her short sea career, the heavy cruiser USS Quincy is also believed to be the first ship to bombard the two Axis partners—Germany and Japan.

On 14 July 1945, the Quincy, under the cover of darkness, moved in on main Japanese island of Honshu, and with other ships of Admiral William F. Halsey's Third Fleet, rained destruction on Kamaishi.

In the battle of Savo Island on 8-9 August 1942 the Quincy was sunk. The last order of the Quincy's skipper, Captain Samuel N. Moore, USN, killed during the action was—"We're going down—Give them hell."

Previous to its sinking the Quincy was commanded by Captain Elliott M. Senn, USN, and Captain John A. Waters, jr., USN.

**ARMY AIR FORCES.** Three B-29s this week attempted a non-stop flight from Japan to Washington, D. C., but were forced down at Chicago, Ill., after completing 5,995 miles of the 6,500-mile trip. The take-off was made from Mizutani Airfield in Southern Hokkaido. An approximate great circle course was set for the Kuriles and Aleutians over southern Alaska and the Canadian Rockies.

The air journey was resumed from Chicago as soon as the planes were refueled. Aboard the planes were Lt. Gen. Barney McK. Giles, Maj. Gen. Curtis LeMay and Brig. Gen. Emmett O'Donnell, jr. Twelve men were carried on each plane, the planes having been stripped of unnecessary equipment for the flight. Had the flight been completed non-stop it still would have been 1,100 miles short of the world record set by two British planes from Egypt to Australia in 1939.

General LeMay, interviewed in Washington following his arrival, said that he believed that the war would have ended in two more weeks even if the atomic bomb had not been used or Russia entered the conflict. The atomic bomb, General Giles said, merely gave Japan an excuse to quit.

**Air Technical Service Command—**Col. Donald L. Putt, former director of Technical Services for the ATSC in Europe, has been assigned as Deputy Commanding General, Intelligence (T-2). He relieves Col. John M. Hayward, who becomes assistant deputy commanding general, Intelligence.

**School of Aviation Medicine—**In the absence of Brig. Gen. Eugen G. Reinartz, commandant of the School of Aviation Medicine, Randolph Field, Tex., the assistant commandant, Lt. Col. Fratis L. Duff addressed the first peacetime graduating class

of flight surgeons and flight nurses, 14 Sept. The classes consisted of 145 flight surgeons and 20 flight nurses.

**China Theater—**The vast air redeployment of Chinese armies into Japanese-occupied areas of Eastern China by the United States AAF began 6 Sept. The lift, which involves the transport of 80,000 Chinese soldiers and their equipment, is the largest and most complex ever to be undertaken in the India-Burma or China Theaters. The operation is under the direction of Lt. Gen. George E. Stratemeyer, commanding general of the AAF in the China Theater. The move is divided into two principal operations—the transport of the Chinese Sixth Army from Chihkiang into Nanking by troop carrier and combat cargo transports under Brig. Gen. A. F. Hegenberger, commanding general of the Tenth Air Force, and the lift of the Chinese Ninety-fourth Army from Liuchow into Shanghai by C-54s of the India-China Division of the ATC, under Brig. Gen. William H. Tunner. It is estimated that the movement of the two armies will require 40 days.

**13th Air Force—**The "Long Rangers," 307th Bombardment Group (heavy) of the 13th Air Force, commanded by Col. Clifford H. Rees, flew its last combat strike of the war 11 Aug., hitting the Laha airdrome on Ambolna Island. The group has a record of striking at the enemy on over 700 days of its three years in action. During one period all four squadrons of the group were put in the air 187 days with only one 24-hour period of inactivity, dropping 9,800 tons of bombs in 37,000 air hours logged.

**Air Quartermaster—**Substitution of fresh produce for critical canned items has been established in all AAF commands, the Air Quartermaster has announced. As a result millions of cans of food have been made available for civilian use or for shipment overseas. In the Eastern Technical Training Command there was a saving of 18 per cent of authorized canned vegetables and 26 per cent of authorized canned fruit during the month of June. The Air Quartermaster said similar savings have been effected in other commands.

**MARINE CORPS.** The sale of articles of dress uniform at prices set up in the latest price list of clothing, plus three per cent overhead, to all enlisted men, has been authorized. Formerly this authorization applied only to enlisted men who had served overseas or aboard vessels of the Navy. It is emphasized that accountable officers will not stock articles of dress uniform in order to carry out these orders, but will requisition such articles as may be required when the occasion arises.

**NAVY MEDICAL CORPS.** Capt. Robert G. Davis (MC), USN, left Washington this week for his home in Indianola, Iowa, to recuperate from the ordeal of 43 months' imprisonment by the Japanese.

Medical Officer in Command of U. S. Naval Hospital, Canacao, P. I., Captain Davis and his entire staff were captured 2 Jan. 1942. The three and one-half years that followed were a seemingly endless, hopeless nightmare of beatings, hunger and privation. It came to an end last 30 Aug., which was the fourth anniversary of Captain Davis' embarkation for the Philippines. The 62-year-old Iowan had the added responsibilities of 16th Naval District Medical Officer and commander of the medical supply depot when the Pacific War began.

**ARMY SERVICE FORCES.** The following changes in assignments have been announced within the Army Service Forces:

Lt. Col. William R. Clough relieved from Dale Mabry Field, Fla. and assigned to Requirements and Stock Control Division, Hq., ASF.

Lt. Col. Leon Sutton relieved from Wright Field, Ohio, and assigned to Office of Director of Material, Hq., ASF.

Lt. Col. Harold S. Boston, relieved from Oklahoma City ATSC and assigned to Office of Director of Supply, Hq., ASF.

Lt. Col. Mitchel M. Karlene relieved from AAF Redistribution Station #5 and assigned to Office of Director of Material, Hq., ASF.

Lt. Col. Douglas S. Soper, relieved from AAF Redistribution Station #6 and assigned to Office of Director of Supply, Hq., ASF.

Lt. Col. John A. Petentier relieved from AAF Redistribution Station #4 and assigned to Planning Division, Hq., ASF.

Lt. Col. Earl B. Houston relieved from Office, Director of Plans and Operations, ASF, and assigned to Memphis Engineer District, Memphis, Tenn.


**Transportation Corps—**Nearly two and one half million troops and more than 44 million ship tons of cargo were sent from the Army's West Point ports of embarkation during the 45 months from December, 1941, through August, 1945.

America's mighty battle strength funnelled to fighting fronts half a world away through three major ports and two sub-ports operated by the Army Transportation Corps. The San Francisco Port of Embarkation handled the bulk of the load, with 1,655,000 troops embarked and 22,751,000 ship tons of cargo outloaded.

The Seattle Port of Embarkation—Fort Lawton, Wash., was the staging area for the great Northwest port. The Portland Sub-Port was administered under the Seattle Port's control. Another Seattle sub-port was Prince Rupert, British Columbia.

# LET'S KEEP AMERICA STRONG IN THE AIR!

CONSOLIDATED VULTEE AIRCRAFT  
CORPORATION



ANSWERING  
THE CALL TO  
SERVICE *Everywhere*

**LILY-TULIP**  
PAPER CUPS AND FOOD CONTAINERS  
A VITAL HEALTH PROTECTION SERVICE

122 EAST 42nd STREET  
NEW YORK 17, N. Y.

1325 ST. LOUIS AVENUE  
KANSAS CITY 7, MO.

3050 EAST 11th STREET  
LOS ANGELES 23, CALIF.



The Los Angeles Port of Embarkation at Wilmington, Calif., handled 188,000 troops and 8,645,000 ship tons of cargo.

**9th Service Command**—Two commendations in 12 months for "superior performance of duty" has won train guard detachment 1909 SCU of the Army's Southern district in Los Angeles the distinction of being the first organization in the Ninth Service Command to be awarded the Meritorious Service Unit star.

The organization, headquartered in Union Station, will aid the star to its Meritorious Service Unit plaque, which was awarded at the close of 1944. The star, authorized in lieu of an additional plaque, represents the period between 13 Jan. and 31 July, this year. Military personnel of the detachment also were cited for "maintenance of a high standard of discipline" during the period. They may continue to wear the MSU insignia, headquarters, Ninth Service Command at Fort Douglas, Utah, announced.

**ASF Depots**—Breaking its own record for completing the safest month in its history, the Columbus Army Service Forces Depot has announced through its commanding officer, Col. S. I. Zeidner, that a new low accident frequency rate of 2.07 was reached during the month of August 1945. The July rate of 2.49 had previously been the lowest in the Depot's history. More than 1,443,624 man hours were worked during the month in handling supplies for our fighting forces.

**Quartermaster Corps**—Appointment of Col. Kester L. Hastings to the post of Director of Personnel, succeeding Brig. Gen. Henry D. F. Munnikhuysen, has been announced by Lt. Gen. Edmund B. Gregory, The Quartermaster General. General Munnikhuysen, who directed the Quartermaster Corps military and civilian personnel through the war period, has been assigned to the Organization, Planning & Control Division, Office of The Quartermaster General.

How the Quartermaster Corps accomplished the tremendous administrative task imposed upon it by World War II was outlined last week to business and professional women by Brig. Gen. Harold A. Barnes, QMC. General Barnes, Deputy The Quartermaster General for Administration and Management throughout the war, addressed the District of Columbia Business and Professional Women's Club.

During the 44 months of actual warfare alone, the general revealed, The Quartermaster Corps procured, stored and distributed more than \$20,000,000,000 worth of clothing, food, equipment and general supplies, exclusive of fuels and lubricants. Distribution for the Quartermasters usually meant right to the front line area, he said.

Facilities, properties and supplies, formerly assigned to the Richmond Holding and Reconsignment Point, were reassigned to the jurisdiction of The Quartermaster General for use and operation by the Richmond Army Service Forces Depot on 15 Sept., according to an announcement by Col. O. W. Humphries, commanding officer of the Richmond depot.

The H&R Point has been under control of the Chief of Transportation since its activation in June, 1942. During the war the H&R Point, which adjoins the depot, served as a transportation corps storage area with facilities to back up ports along the eastern seaboard.

**Medical Corps**—Top medical authorities in the European Theatre, using as a barometer the vast research proving ground of the armies at war, have exploded the dream that penicillin is the cure-all for gonorrhea and syphilis. "Belief in the absolute curative powers of the sulfa drugs and penicillin for venereal disease is one of the contributing factors to the dangerously increasing venereal rate among American soldiers now retained in the Theatre," Col. Tom P. Whayne, Chief of the Preventive Medicine Division, office of the Theatre Chief Surgeon, states.

Fear of a similar acceptance of this conviction by the American public and a consequent let-down in VD safeguards has moved Maj. Gen. A. W. Kenner, Theatre Chief Surgeon, to issue a warning that this misconception is resulting in a danger of returning soldier menacing the health of a whole nation. An immediate intensification of Army policy and procedures regarding venereal disease control is being instituted against this threat of imperiled national health, officers of the Surgeon's office state.

Recent departures from the office of the surgeon general, Washington, D. C. include:

Col. Burr N. Carter, MC, Surgical Consultants Division, assigned to MDRP, Billings General Hospital, Fort Benjamin Harrison, Indiana.

Col. Mather Cleveland, MC, Surgical Consultants Division, Orthopedic Branch, to Tilton General Hospital, Fort Dix, N. J.

Col. Howard F. Currie, MC, Supply Service, to A. S. F. Personnel Replacement Depot, Camp Beale, Calif.

Col. Leonard D. Heaton, MC, Operations Service, to MDRP, Carlisle Barracks, Carlisle, Pa.

Arrivals in Washington for duty in the office of the surgeon general include:

Col. Silas B. Hays, MC, European Theater of Operations, to Office The Chief, Supply Service.

Col. Roger G. Prentiss, Jr., MC, Carlisle Barracks, Carlisle, Pa., assigned Chairman, Army Medical Research & Development Board.

**Medical Administrative Corps**—Recent arrivals for duty in the Office of the Surgeon General, Washington, D. C., include:

Lt. Col. Morton A. Seidenfeld, from the classification and Replacement Branch, to Neuropsychiatry Consultants Division, Clinical Psychology Branch.

Maj. Leslie J. Krob, Louisville Medical Depot, Supply Service, Storage & Maintenance Division, Depot Operations Branch.

Maj. Donald F. Westra, MDRP, Billings General Hospital, to Personnel Service, Military Personnel Division, Procurement, Separation & Reserve Branch.

Capt. Lawrence I. O'Kelly, MAC, Classification & Replacement Branch, to Neuropsychiatry Consultants Division, Clinical Psychology Branch.

1st Lt. Fred E. Liebig, MAC, St. Louis Medical Depot, Supply Service, Storage & Maintenance Division, Maintenance Branch.

1st Lt. F. S. Tarantino, MAC, Formerly Army Medical Purchasing Office, to Supply Service, Storage & Maintenance Division, Depot Operations Branch.

2nd Lt. George W. Jacobs, MAC, MD Replacement Pool, Tilton General Hospital, to Professional Administrative Service, Medical Statistics Division, Statistical Analysis Branch.

**Army Nurse Corps**—Army nurses, as is the case with all officers interested in commissions in the Regular Army, may file a statement of interest to The Adjutant General, indicating their interest in being considered for a commission in the Regular Army.

It is understood that a number of outstanding officers will be needed in the Regular Army peacetime establishment. Until appropriate legislation is enacted, the War Department cannot announce the conditions which will govern selection of these officers or the number required. Nurses who have served in the emergency and who have too many points in service at this time may file a Statement of Interest and

be separated from active duty without prejudice to their chances of being tendered a commission when legislation is enacted.

**Ordnance Department**—Col. Gordon B. Welch, formerly director of fire control activities at Frankford Arsenal, has been appointed Arsenal commander to succeed Col. John B. Rose. Colonel Rose retired after three years as commanding officer of Frankford.

**Army Signal Corps**—Recent assignments in the Office of the Chief Signal Officer are as follows: Col. Clay I. Hoppough to Communications Coordination Committee, Col. William W. Jervey to Army Pictorial Service, Major Milton A. Pilcher to Progress and Statistics Branch, Major Harold C. Wafer to Procurement and Distribution Service, and Major James F. O'Donnell and Capt. Howard R. Pietsch to Redistribution and Disposal Branch.

A mission consisting of two American Signal Corps officers was sent some weeks ago to France to assist the French Signal Corps in adapting to its needs the training methods and procedures of American Signal Corps Schools. This mission was headed by Col. Jay D. B. Lattin, Signal Corps, now Signal Officer of the Second Service Command, formerly Assistant Commandant of the Officers School and four times Director of the Department of Training Literature (now the Signal Corps Publications Agency) at the Eastern Signal Corps Schools at Fort Monmouth, N. J. He was assisted by Lt. Col. Robert G. Swift, Acting Commandant of the Central Signal Corps School at Camp Crowder, Mo.

Communications networks in Italy have been restored so effectively by the U. S. Army Signal Corps that all sections of the country are now linked together by adequate cable and wire facilities for military and occupational purposes, according to a report to the Chief Signal Officer from the Mediterranean Theater. The prewar Italian civilian wire communications network was both extensive and diversified but, as the result of German destruction, rehabilitation was required on both inside and outside plants before much of that system could be employed. Combining of Italian and American equipment into an efficient and reliable network presented many technical problems.

**NAVY NURSE CORPS.** In preparation for the releasing of nurses of the Naval Reserve to inactive duty as a part of the Navy's demobilization plan, seven officers of the Nurse Corps have reported for training to the Service School Command, Naval Training Center, for temporary duty under instruction at the Naval Training School (Demobilization), Great Lakes, Ill. After training, six of the nurses will report as Assistant Civil Readjustment officers at the Personnel Separation Units for Women of the Navy as follows:

Lt. Joan D. Meyers, (NC), USN, and Lt. Gladys V. Bussey, (NC), USN, will go to New York City.

Lt. (Jg) Leanna A. Ruth, (NC), USN, will go to Great Lakes, Ill.

Lt. Margaret R. Berry, (NC), USN, to San Francisco, Calif.

Lt. Margaret Jackson, (NC), USN, to Memphis, Tenn.

Lt. Mary G. Dudley, (NC), USN, to Washington, D. C.

Lt. (Jg) Charlotte C. Maas, (NC), USN, will return to the Nurse Corps Office in the Bureau of Medicine and Surgery, Washington, D. C.

Capt. Sue S. Dauser, (NC), USN, of Washington, D. C., Superintendent of the Nurse Corps, USN, attended meetings of the National Nursing Council For War Service in New York City, 8 Sept.

Lt. Comdr. Ruth E. Anthony, (NC), USN, has been promoted, as of 1 Sept., to the rank of Commander. Miss Anthony has been principal Chief Nurse at the United States Naval Hospital, Newport, R. I., for almost four years and has recently taken over those same duties at the United States Naval Hospital, Great Lakes, with additional duties as Senior Nurse Corps officer in the Ninth Naval District.

Lt. (Jg) Anne Bruchal, (NC), USN, leaves the Audio-Visual Department of the Bureau of Medicine and Surgery, Washington, D. C., this month, to report to the United States Naval Air Station at Alameda, Calif., for training and duty as a Flight Nurse with the Air Evacuation Division, Naval Air Transport Service.

Lt. Laura S. DeWitt, (NC), USN, has left the Naval Dispensary at the Training Center, Miami, Fla., to be Chief Nurse at the Navy's new Special Hospital for convalescent patients, at Camp Wallace, Texas. Miss DeWitt will have twenty-five nurses for the opening of this hospital.

The following officers of the Nurse Corps are reporting to St. Elizabeth's Hospital, Washington, D. C., for a special course in psychiatric nursing: Lt. Dorothy B. Cohen, Lt. (Jg) Mary H. Lynch, Lt. (Jg) Mary C. Coody, Lt. (Jg) Ruth O. Obermeier, Lt. (Jg) Hazel M. Buhrman, Lt. (Jg) Lorraine A. Murphy, Lt. (Jg) Elsie F. Jackson, Ens. Ann Robinson, Ens. Jean E. Wilson, and Ens. Norma R. Dugosh, all of the Naval Reserve; and Lt. (Jg) Ruth E. McMullen, of the Regular Nurse Corps. Lt. Alice G. Womble (NC), USN, is Nurse Corps officer in charge of the course.

**ARMY GROUND FORCES.** The Distinguished Service Medal and the Legion of Merit were presented by Gen. Jacob L. Devers, Commanding General of Army Ground Forces, to Maj. Gen. C. L. Hyssong, former Assistant Chief of Staff, G-1, Army Ground Forces, in a ceremony at the Pentagon Saturday, 15 Sept.

Maj. Gen. Clarence R. Huebner, GSC, was announced as Assistant Chief of Staff, G-3, of this headquarters. Gen. Huebner is well known as the former commander of the 1st Infantry Division, which he led from Sicily to the beaches of Normandy, where his men drove across France into Belgium and Germany. When von Rundstedt made his great gamble in the Ardennes, Gen. Huebner had been made commander of the V Corps which held the northern shoulder against the German assaults and prevented a breakthrough to the north.

Brig. Gen. Richard C. Partridge, USA, has reported for permanent duty with the Ground Plans Section. Also reporting for duty is Brig. Gen. Ralph J. Canine, USA. Assigned to the Ground Plans Section, General Canine was formerly Chief of Staff of the XII Corps, which saw action in the European Theater.

Other officers newly assigned include Col. James B. Quill, Cav., Lt. Col. Harry E. Hasslinger, Inf., Maj. Bruce B. Caulder, FA, Maj. Carl G. Nottrott, Inf., Herman M. Volheim, Inf., and Capt. Julius Silverstein, Inf., to the Ground G-1 Section; Col. Norman M. Lack, GSC, Ground Plans Section; Col. Philip H. Enslow, FA, Ground G-4 Section; Col. John A. Sawyer, Sig C, Ground Signal Section; Lt. Col. William A. Hamrick, AGD, Ground Adjutant General Section; Maj. Edward A. Berendt, CWS, Ground Chemical Section; Maj. Robert L. Steenrod, QMC, Ground Quartermaster Section, and Capt. Bert Parks, Inf., Ground Special Information Section.

Lt. Col. Murrell C. Scott, QMC, former Quartermaster representative on the Army Ground Forces Board, Mediterranean Theater of Operations, was available for conferences here several days of last week.

**Armored Center**—Lt. Col. Thettus E. Sims, holder of the Bronze Star Medal, has been assigned as Historical Officer. Previous service includes Personnel Officer here in 1941; Chief, Security Control Section at Headquarters, ETO in 1943-44; Assistant G-1 of the North African Theater of Operations in 1944; and assignment with the 12th



Army Group prior to his new post.

**Armored Replacement Training Center**—Lt. Col. Donald M. Schorr, Commanding Officer of the 5th Regiment, and former West Point athlete active in baseball, hockey, and football, keeps in top shape as catcher on the regimental baseball team.

**Armored School**—Col. Harold Engerud, who wears five battle stars for campaigns against the Germans, has been appointed Acting Director of the Wheeled Vehicle Department, succeeding Lt. Col. C. E. Geiger. The appointment was the first announced by Maj. Gen. Hugh J. Gaffey after he became Commandant. Col. Engerud was Assistant Provost Marshal of the Third Army in France and Germany.

Capt. Frank Retchlin has been appointed School Special Service Officer. He succeeded 1st Lt. Paul P. Dugas, who held the position two years.

The following officers have been assigned to the Armored School: Lt. Col. F. J. Redding, Jr., Lt. Col. Everett W. Murray and Maj. William C. Bowen, all of the Tactics Department; 1st Lt. John J. Kearns, Gunnery Department; 1st Lt. Frank A. Smith, School Troops; 2nd Lt. George A. Heys, Armored Officer Candidate School; CWO Charles B. Duckworth and CWO Charles W. Sellers, both of Commandant and Staff Section.

**Cavalry School**—The following Cavalry officers are on temporary duty at the Armored Center, Ft. Knox, Ky., and the Infantry School, Ft. Benning, Ga.: Col. Vennard Wilson, 1st Lt. Victor Shantz, William V. Homans and Bernard F. Lynch, all of the Staff and Faculty, and Capt. Charles B. Gay and 1st Lt. Phillip S. Smith, of School Troops.

1st Lt. Donald W. Carlson has reported for duty with the Staff and Faculty, and has been assigned as Assistant Operations Officer.

The following officers have been relieved from assignment with the Staff and Faculty, and will report to the Separation Center at Ft. Leavenworth, Kans., for relief from active duty: Capt. John P. Souther, 531 W. Washington Street, Gainesville, Ga.; and Capt. Richard S. Davies, 707 W. Bennett Street, Compton, Calif.

1st Lt. Robert J. Jones has been assigned to the Animal Pool Detachment, School Troops.

Capt. Lester B. Johnson, Infantry, has been assigned to Headquarters and Headquarters Detachment, School Troops, with principal duty as S-3.

**Infantry School**—Maj. Gen. John W. O'Daniel, Commandant, decorated two soldiers in separate ceremonies here recently. Awarded the Distinguished Service Cross was Cpl. Edgar Pelletier. Also honored was Lt. Col. Newman R. Burns, awarded the Legion of Merit, earned while serving in Burma as liaison officer with the Chinese 38th Division.

Two hundred and thirty-eight members of the 1945 graduating class of the United States Military Academy this week completed their advanced studies at the Infantry School.

► **ATOM BOMB ON SHIP.** News dispatches from Tokyo this week reported that plans are being made there to tow the damaged Japanese battleship Nagato 500 miles to sea and subject her to the explosion of an atomic bomb to test the effect of that new weapon upon a large modern warship and also to test the effect of such an explosion over water.

Although reports from Tokyo said that the Navy was making the tests, officials at the Navy Department officially said merely that they had "no comment" on the proposal. Unofficially, there was considerable discussion to the effect that the test would reveal little of value to the Navy, it being contended that an unmanned ship, lying dead in the water, unprotected by its own or accompanying gun fire or fighter planes, could be sunk by concentrated heavy gunfire, torpedoes or bombs as well as by an atomic bomb.

The proposed bombing is reminiscent of the series of tests on forfeited German warships and on some of our own obsolete war ships after World War I. Although the vessels were sunk by aerial bombardment, the significance of the tests was the subject of debate for years thereafter, mostly for the same reasons as given in the atomic bomb tests. However, the tests did spur the Air Corps on to further development of its overwater navigation and air versus ship bombardment, and also, it is said, led to many changes in ship design and armament to give better flotation and damage control as well as gun and air protection and maneuverability.

It is recalled that Under Secretary of the Navy Gates, in a recent talk, pointed out the possibilities of the Navy, through its own carrier-borne aircraft, making use of the new atomic weapon.

#### Aviation Discharges

According to a Navy Department announcement this week, provisions will be made outside Alnav 196 for the more rapid discharge of certain categories of aviation personnel and other classes of personnel in which excesses over requirements may exist.



A thing of beauty now he hails . . .  
And skips extraneous details.

**TORO**  
POWER MOWERS  
TORO MANUFACTURING CORP., MINNEAPOLIS, MINNESOTA

**HOBART** ELECTRIC  
FOOD  
MACHINES  
Mixers • Slicers • Peelers  
Food Cutters • Dishwashers  
THE HOBART MFG. CO. TROY, OHIO

**hallicrafters**  
BUILDERS OF THE  
**FAMOUS SCR-299**  
MOBILE RADIO STATION

**hallicrafters**  
**RADIO**  
THE HALL CRAFTERS COMPANY  
MANUFACTURERS OF RADIO AND  
ELECTRONIC EQUIPMENT CHICAGO 16 U.S.A.

**DYEING**  
Army and Navy uniforms, blankets, insignia,  
dyed or re-dyed in any desired fast color.  
We specialize in live, permanent colors. Any  
fabric that is dyeable. Quality work. Inquiries  
invited.  
**LOEBL DYE WORKS, Inc.**  
Brockton, Va.

#### Development of Atomic Bomb (Continued from Page 135)

Adjacent cells having heavy concrete walls. These cells form a continuous structure (canyon) which is about 100 feet long and is two-thirds buried in the ground. Adjacent to this canyon are the control rooms, analytical laboratories, and a laboratory for further purification of the plutonium after it has been decontaminated to the point of comparative safety.

8.42. Uranium slugs that have been exposed in the pile are transferred under water to the first of these cells and are then dissolved. Subsequent operations are performed by pumping solutions or slurries from one tank or centrifuge to another.

#### Performance of Clinton Pile

8.43. The Clinton pile started operating on 4 November 1943 and within a few days was brought up to a power level of 500 kw at a maximum slug surface temperature of 110°C. Improvements in the air circulation and an elevation of the maximum uranium surface temperature to 150°C brought the power level up to about 800 kw, where it was maintained until the spring of 1944. Starting at that time, a change was made in the distribution of uranium, the change being designed to level out the power distribution in the pile by reducing the amount of metal near the center relative to that further out and thereby to increase the average power level without anywhere attaining too high a temperature. At the same time improvements were realized in the sealing of the slug jackets, making it possible to operate the pile at higher temperature. As a result, a power level of 1,800 kw was attained in May, 1944; this was further increased after the installation of better fans in June 1944.

8.44. Thus the pile performance of June 1944 considerably exceeded expectations. In case of control, steadiness of operation, and absence of dangerous radiation, the pile has been most satisfactory. There have been very few failures attributable to mistakes in design or construction.

8.45. The pile itself was simple both in principle and in practice. Not so the plutonium-separation plant. The step from the first chain-reacting pile to the Clinton pile was reasonably predictable; but a much greater and more uncertain step was required in the case of the separation process, for the Clinton separation plant was designed on the basis of experiments using only microgram amounts of plutonium.

8.46. Nevertheless, the separation process worked! The first batch of slugs from the pile entered the separation plant on 20 De-

cember 1943. By the end of January 1944, metal from the pile was going to the separation plant at the rate of 1/4 ton per day. By 1st February 1944, 190 mg of plutonium had been delivered and by 1st March 1944 several grams had been delivered. Furthermore, the efficiency of recovery at the very start was about 50 per cent, and by June 1944 it was between 80 and 90 per cent.

8.47. During this whole period there was a large group of chemists at Clinton working on improving the process and developing it for Hanford. The Hanford problem differed from that at Clinton in that much higher concentrations of plutonium were expected. Furthermore, though the chemists were to be congratulated on the success of the Clinton plant, the process was complicated and expensive. Any improvements in yield or decontamination or in general simplification were very much to be sought.

8.48. Besides the proving of the pile and the separation plant and the production of several grams of plutonium for experimental use at Chicago, Clinton and elsewhere, the Clinton Laboratories have been invaluable as a training and testing center for Hanford, for medical experiments, pile studies, purification studies, and physical and chemical studies of plutonium and fission products.

8.49. As typical of the kind of problems tackled there and at Chicago, the following problems—listed in a single routine report for May, 1944—are pertinent:

- Problems Closed Out During May 1944:**
  - Search for New Oxidizing Agent
  - Effect of Radiation on Water and Aqueous Solutions
  - Solubility of Plutonium Peroxide
  - Plutonium Compounds Suitable for Shipment
  - Fission Product Distribution in Plant Process Solutions
  - Preliminary Process Design for Adsorption Extraction
  - Adsorption Semi-Works Assistance
  - Completion of Adsorption Process Design
- New Problems Assigned During May, 1944:**
  - New Product Analysis Method
  - Effect of Radiation on Graphite
  - Improvement in Yield
  - New Pile Explorations
  - Waste Uranium Recovery
  - Monitoring 205 Stack Gases
  - Disposal of Active Waste Solutions
  - Spray Cooling of X Pile
  - Assay Training Program

(Please turn to Page 144)



## GOOD NEWS

for You Officers Who Have Been  
"Sweating it Out!"

To you thousands of officers of the Armed forces who have been so understanding about our inability to promptly fill your uniform needs during the period of critical material shortages, we offer our thanks.

Your patience is to be rewarded for we are now able to supply many of the items which were marked "temporarily out of stock" in our catalog. The situation is easing up and we already have a fair supply of high quality Elastique for your winter uniform needs. Beaver overcoating, and all wool gabardine and worsted shirtings in dark green and pink shades. Being reluctant to substitute inferior fabrics or workmanship has made it difficult to render the usual Associated Service, but our reputation for quality and fair dealing could not be sacrificed. That's why "buy Associated" has been a by word among discriminating officers since 1917. You buy with confidence of the finest materials, craftsmanship and fitting through the mail.

**ASSOCIATED**  
*Military Stores, Inc.*

19 W. JACKSON BLVD.  
DEPT. N. J. CHICAGO 4, ILL.

### Commissioned in Navy

The following nominations of Naval aviators were sent to the Senate 18 Sept.:  
 The following named officers of the Naval Reserve to be lieutenants (jg) in the Navy:

Paul K. Blesh  
 Arthur F. Farwell, jr.  
 Isaac J. Heizer, jr.  
 John V. Hewitt, jr.  
 Glen Jacobsen  
 Hugh K. Laing  
 Henry T. Locher, jr.

Alfred D. Morgan  
 Malcolm S. Ragan  
 Howard S. Roberts  
 Harwill E. Robinson  
 William M. Romberger  
 Joseph W. Runyan

The following named officers of the Naval Reserve to be ensigns in the Navy:  
 John E. Adams  
 Harry W. Alcorn  
 Ralph Alford  
 Ralph M. Alford  
 Walter W. Allred  
 Niels K. Allerup  
 William T. Amen  
 George D. Anderson, jr.

Leo V. Andrecht  
 John H. Andrews  
 Thomas L. Andrews, jr.  
 Dan P. Appleby  
 Thomas E. Armour  
 John G. Armstrong  
 Radford K. Arner  
 Eric Arnholdt  
 Jack Arnold  
 David A. Arrivee  
 Marvin M. Arthurs  
 Randal N. Atkinson  
 John W. Aulson  
 William R. Austin  
 Arnold W. Ayers  
 Haakon A. Bach  
 Sverre O. Bach  
 James G. Bagot  
 George O. Baldoek  
 James F. Barfknecht  
 Arthur Barker, jr.  
 Floyd "M" Barkley  
 Frank D. Barlow  
 Jerry M. Barlow  
 William G. Barnes  
 James W. Barnitz  
 John J. Bartholomew  
 Watson Bartholomew  
 William H. Bartles  
 Richard C. Bartlett, jr.

Kenneth LeR. Bass  
 Hugh N. Batten  
 Richard K. Batten  
 Leonard "A" Batterson  
 William C. Baumgardner  
 James L. Baxter  
 Roy N. Bean  
 Maurice E. Beaulieu  
 Joseph L. Beery  
 William E. Behringer  
 John K. Belling  
 Earl C. Bell  
 Darrell "C" Bennett  
 George C. Benoit  
 Howard G. Bentall  
 Robert F. Bergeron  
 Greenville R. Berkeley, jr.  
 Arnold A. Berner  
 Frank A. Biancha  
 Herbert E. Biedehach  
 LaVell M. Bigelow  
 Wayne R. Bise  
 Gary W. Bishop  
 James B. Black  
 Sherman C. Black  
 Harry J. Blakey  
 James McN. Blakey  
 Lucile W. Blevins  
 William F. Bley  
 Stanley H. Blumen-thal  
 Samuel D. Blythe  
 Virgil R. Bonnette, jr.  
 Ivor C. Bouchard, jr.  
 Edgar J. Boudinot, jr.  
 Frederick W. Bowen  
 Charles R. Bradford  
 Francis L. Brady, jr.  
 Virgil R. Brasher  
 Harold A. Bres, jr.  
 Benjamin F. Briant  
 Harvey Broadbent, jr.  
 Edwin D. Brock  
 Wilber A. Brock  
 Charles L. Brooks  
 Billy P. Brown  
 Carl A. Brown, jr.  
 Edgar C. Brown  
 Keith C. Brown  
 Melvin M. Brown  
 Robert N. Brown  
 Orville S. Brownlee  
 Joseph D. Brummett  
 Theodore G. Bucken-miller  
 George E. Bunker  
 Frank C. Bunker, jr.  
 Louis R. Burnett  
 Robert G. Burnett  
 Hugh B. Burris

Alfred D. Morgan  
 Malcolm S. Ragan  
 Howard S. Roberts  
 Harwill E. Robinson  
 William M. Romberger  
 Joseph W. Runyan  
 Herchel W. Burson  
 John H. Burton  
 George T. Butcher  
 David S. Butler  
 George K. Bywater  
 John W. Cadie, jr.  
 John F. Caffey  
 Sherman C. Cagle, jr.  
 James B. Cain  
 John L. Cain  
 Robert T. Caldwell  
 David K. Callow  
 Charles E. Carpenter  
 Charles A. Carr  
 Charles I. Carter  
 Harold A. Carter  
 John L. Carter  
 Terence P. Cassidy  
 Jesse LeR. Caton, jr.  
 Lawrence M. Caudle  
 Robert B. Cavanaugh  
 Robert M. Chamberlin  
 Alfred W. Chandler, jr.  
 Melvin LeR. Chapman  
 John F. Charles  
 Harlan R. Cheuvront  
 Robert B. Choate  
 Elmer J. Chubb  
 Sidney F. Cichy  
 Bryce L. Clark  
 Murray P. Clark  
 Robert A. Clarke  
 Marvin L. Claude  
 Jesse S. Cleveland  
 Robert L. Clift, jr.  
 Robert J. Clinton  
 William P. Cloyes  
 Paul W. Cobb  
 Albert L. Cock  
 Gerald A. Coeur  
 John S. Cole  
 Robert A. Cole  
 Joseph L. Coleman  
 Robert G. Coleman, jr.  
 Lawrence E. Colgrove, jr.  
 James R. Collier  
 Francis L. Collins, jr.  
 Vincent W. Collins  
 Samuel E. Commella  
 Eugene V. Conklin  
 Lee T. Conklin  
 Raymond F. Conkling  
 Edward A. Conlon  
 Ralph R. Conner  
 James S. Cooper  
 Paul Cordray  
 Kenneth "J" Cory  
 Hubert P. Cottrell  
 Granville W. Cowan  
 Robert F. Cox  
 James R. Craig  
 Charles Z. Crain  
 Clark "E" Crain  
 Joseph A. Crampton, jr.  
 Ray I. Crandall  
 Don G. Crane  
 David H. Crist  
 Robert W. Croman  
 Robert H. Cron  
 John T. Crosby  
 LaVerne W. S. Cum-mins  
 Hector C. Cyr  
 Philip Daly  
 James R. Danielson  
 Herbert W. H. Dan-ker  
 Ralph Dannettell, jr.  
 Merl W. Davenport  
 Daniel K. Davis, jr.  
 Douglas C. Davis  
 Jack J. S. Davis  
 Richard L. Davis  
 Orville F. DeMoulin  
 George W. Denly  
 Robert R. Dennes, jr.  
 Reynburn H. Dennis, jr.  
 Allan A. Deverick  
 Alphonse E. DeWach-ter  
 Richard G. Dickerson  
 John P. DiMarchi  
 Marvin LeR. Dollana  
 Omer J. Donahoe  
 Landis E. Doner  
 R. Russell Dooge, jr.  
 John J. Doolan  
 Patrick C. Dorsey  
 Benjamin T. Douglas  
 William E. Dowdell  
 James T. Doyle

Robert W. Drewelow  
 Robert F. Duffy  
 Harvey K. Dunning  
 Charles O. Durocher  
 Dick W. Dutton  
 William R. Eason  
 Gordon K. Ebbe  
 Howard B. Eddy  
 Emory H. Edwards, jr.  
 George R. Edwards, jr.  
 Arthur G. Elder  
 Theodore Elefter  
 Albert M. Ellingson  
 Clyde A. Elliott  
 Homer S. Elliott  
 Ralph E. Elliott, jr.  
 Jack E. Elizey  
 Clayton M. Emery  
 Donald D. Engen  
 Raymond K. Engle  
 Robert C. Engram  
 Howard G. Ervin, jr.  
 Virgil J. Evans  
 Harold T. Ewing  
 James W. Ewing  
 Clifford E. Fanning  
 Robert A. Farns-worth, jr.  
 William W. Feaster  
 Arthur C. Feller  
 Charles G. Felst  
 Santa A. Felice  
 Caesar Fernandez, jr.  
 Richard V. Fertal  
 Herbert T. Fichman  
 Leslie R. Ficks, jr.  
 Stanley C. Fierstein  
 John G. Fifield  
 William M. Finck  
 Kenneth B. Finka  
 Delbert N. Fisher  
 James J. Flite  
 Donald W. Fledder-son  
 Lloyd C. Flynt  
 Frank E. Folts  
 Edward J. Foote  
 Orin N. Ford, jr.  
 Frederick D. Forger  
 John F. Fottrell  
 Harry Fox  
 Thomas E. Franco  
 Charles S. Frantz  
 Grover A. Frater  
 Rowland G. Freeman, III

Robert W. Drewelow  
 Robert F. Duffy  
 Harvey K. Dunning  
 Charles O. Durocher  
 Dick W. Dutton  
 William R. Eason  
 Gordon K. Ebbe  
 Howard B. Eddy  
 Emory H. Edwards, jr.  
 George R. Edwards, jr.  
 Arthur G. Elder  
 Theodore Elefter  
 Albert M. Ellingson  
 Clyde A. Elliott  
 Homer S. Elliott  
 Ralph E. Elliott, jr.  
 Jack E. Elizey  
 Clayton M. Emery  
 Donald D. Engen  
 Raymond K. Engle  
 Robert C. Engram  
 Howard G. Ervin, jr.  
 Virgil J. Evans  
 Harold T. Ewing  
 James W. Ewing  
 Clifford E. Fanning  
 Robert A. Farns-worth, jr.  
 William W. Feaster  
 Arthur C. Feller  
 Charles G. Felst  
 Santa A. Felice  
 Caesar Fernandez, jr.  
 Richard V. Fertal  
 Herbert T. Fichman  
 Leslie R. Ficks, jr.  
 Stanley C. Fierstein  
 John G. Fifield  
 William M. Finck  
 Kenneth B. Finka  
 Delbert N. Fisher  
 James J. Flite  
 Donald W. Fledder-son  
 Lloyd C. Flynt  
 Frank E. Folts  
 Edward J. Foote  
 Orin N. Ford, jr.  
 Frederick D. Forger  
 John F. Fottrell  
 Harry Fox  
 Thomas E. Franco  
 Charles S. Frantz  
 Grover A. Frater  
 Rowland G. Freeman, III

Charles H. Freer  
 Charles T. Frohne, jr.  
 Howard Frost, jr.  
 Robert M. Frye  
 Charles R. Fuller  
 Louis K. Furst  
 Fred H. Gage, jr.  
 Francis E. Gahagen  
 William R. Gaines  
 Robert E. Gallatin  
 Roy F. Gallon  
 Wesley T. Gandy  
 Robert C. Gardemal  
 William L. Garlie  
 George M. Gauen  
 John A. Geddes  
 Harold R. Gentry  
 John K. Gentry, jr.  
 Robert B. Giblin  
 Olen G. Giles  
 Clyde Gilmore  
 Edward F. Glaze  
 John J. Goebel  
 Donald E. Gony  
 Arthur R. Goodall  
 Henry G. Goodloe  
 William D. Gordon, jr.  
 Rannald F. Graham  
 William J. Graham  
 Harry S. Graves  
 John R. Grieve  
 Ainslee A. Gruen  
 William J. Gunther  
 Steven B. Hagadorn  
 Robert J. Haggerton  
 Herbert O. Haley  
 James A. Halford  
 Paul DeM. Halpin  
 Walter Hamilton, jr.  
 Weaver F. Hamilton  
 Eugene R. Hanks  
 Bruce Hanna  
 Earl W. Hansen  
 Thomas H. Hardy  
 George M. Harlan  
 Manfred B. Harland  
 Monte D. Harouff  
 Albert R. Harrison  
 Herbert B. M. Harris-son  
 Warren  
 Payton O. Harwell  
 Rolland L. Haseltreiter  
 Francis "J" Hawley  
 Albert W. Hayward  
 Charles R. Heatherly  
 Robert P. Heckin  
 Walter H. Helder, jr.  
 Henry P. Helsig  
 Daniel G. Helms  
 Andrew H. Hender-son, jr.  
 William J. Hendrick  
 Joseph J. Hennessy  
 Paul V. Hennessy  
 William D. Henry

William E. Henry  
 Douglas K. Herbert  
 Louis D. Herman  
 William A. Herpich  
 Quentin Herring  
 William S. Hertig  
 Jack M. Hestlow  
 Robert D. Hilbish  
 Hubert J. Hilleshelm  
 Arthur L. Hirsbrun-ner  
 Gordon S. Hodgson  
 Thomas H. Hogan  
 Billy D. Holder  
 Edward B. Holley, jr.  
 Keith M. Hollings-worth  
 Raymond E. Hollo-mon  
 Harold E. Holly  
 Robert C. Holmes  
 Evald Holmgard  
 Bill Brien Holt  
 Russell E. Holt  
 James A. Homyak  
 Kenneth C. Hooper  
 John P. Hopkins  
 Samuel Hopkins, jr.  
 Robert T. Hoppe  
 Benjamin C. Horton  
 Vaughn Hubbard  
 Raymond W. Hudeck  
 Jesse C. Huggins, jr.  
 Howard A. Hughes  
 John F. Humphrey  
 Robert F. Hunt  
 James A. Huser, jr.  
 Glen C. Hutchison  
 Richard W. Huxford  
 Charles R. Ibach, jr.  
 Charles T. Idle, jr.  
 James D. Ingram  
 Donald K. Issitt  
 Edouard V. M. Izac, jr.  
 Harry B. Jackson  
 Robert C. Jackson  
 Rolf E. Jacobsen  
 William H. Jakes  
 John C. James  
 Joseph W. Janecy  
 William N. James  
 Gilbert B. Jansen, jr.  
 Sutton "L" Jaynes  
 Thomas E. Jenkins  
 Donald T. Jensen  
 Gordon J. Jesmer  
 Jack Jeter  
 George H. Jewett, jr.  
 Robert John  
 Charles R. Johnson  
 Dwight F. Johnson  
 John E. Johnson, jr.  
 Robert F. Johnson  
 Silas R. Johnson  
 Frederick J. Johnston  
 Harold E. Johnston  
 William S. Johnston  
 Loring A. Jones  
 DeForest Q. Jorammon  
 Dallas F. Jordan  
 Edmond D. Kemp  
 James P. Kennedy  
 John E. Kennedy  
 Duane S. Kephart  
 Edward F. Keyser  
 Robert R. Kidwell  
 Roe C. Kinnannon  
 Benjamin B. King, jr.  
 Geoffrey B. King, jr.  
 Ralph M. Kingsley  
 Frank G. Kingston  
 Orson A. Kinney, jr.  
 Donald Kirk, jr.  
 Robert "L" Kirk  
 Kay L. Kirven  
 Richard C. Knoeckel, jr.  
 Bernard H. Knott  
 William A. Knouff  
 Richard C. Knowles  
 George Koen  
 Arthur Krakoff  
 Michael H. Krouse  
 Edward Kubicki  
 Melvin M. Kuhn, jr.  
 George A. Kunberger  
 Frank M. Lacey  
 Charles C. Ladenberg-er, jr.  
 Armond J. LaMarre  
 Kenneth "E" Lamp-kin, jr.  
 Frank L. Lane  
 Stanley H. Lane  
 Paul E. Lanham  
 Conrad S. Larson  
 Robin E. Larson  
 Henry S. Laurinot, jr.  
 Emmett B. Lawrence  
 Clyde J. Lee  
 Charles D. Leeper  
 Robert B. Leitch  
 Thomas M. Lemon, jr.  
 William S. Lewis, jr.  
 Harvey L. Lively  
 Theodore L. Locke, jr.  
 Edson G. Loftus  
 Douglas W. Logan  
 William H. Looney, jr.  
 Sidney S. Lots  
 Warren H. Love  
 Richard R. Lowman, jr.  
 Emmert E. Ludeman

Robert T. Lynn  
 Jack M. Lyons  
 Robert F. Lyons  
 James McAulay  
 Robert McBride  
 Thomas D. McBride  
 Elmer R. McClay  
 William R. McClen-don  
 Norman H. McClevey, jr.  
 Robert L. McClure  
 John J. McCoy  
 Channon W. McCrary  
 Fred P. McDaniel  
 Bernard F. McDer-mott  
 William R. McDowell, jr.  
 Joe M. McFadden  
 Edwin McGinnis  
 John F. McGinnis  
 William G. McGinty  
 Franklin O. McGuire  
 John H. McIlmold  
 Ralph E. McIntosh  
 Bruce B. McKaig  
 Thomas R. McKelvey, jr.  
 George W. McKenzie  
 Douglas C. McLaugh-lin  
 Eugene M. McLean, jr.  
 Gregory T. McLean  
 Thomas R. McLenag-han  
 Robert "J" McMahon  
 Joseph E. McManus  
 Franklin B. McMillan  
 John P. McNeela  
 Wallace E. MacDon-ald  
 Clarence E. Mackey  
 Stanislaw Mackey  
 William A. Mackey  
 Thomas L. Macleod, jr.  
 Lawrence M. Madden  
 Robert J. Maghan  
 Alvin N. Main  
 Joseph Maloof  
 Edmund J. Mansueto  
 Gordon W. Martin, jr.  
 John R. Martin  
 John W. Martin  
 William Martin  
 Donald P. Matheson  
 John R. Matthews, jr.  
 Richard F. Matthews  
 Ralph J. Matuszewski  
 George T. Maxwell  
 William C. May  
 Albert J. Mayer  
 Robert W. Mead  
 Henry T. Meador  
 Bert L. Means  
 Joseph V. Meigs  
 Jesse A. Merwin  
 Allen C. H. Merz  
 William F. Middagh  
 Stanley M. Micklebost  
 Duane C. Miller  
 Melvin L. Miller  
 Chester E. Ruffin  
 James F. Rumford  
 "J" "B" Louie Run-yan  
 George R. Rymal  
 Ashbury H. Sallenger  
 Hugh D. C. Saltzman  
 John W. Samson  
 Entimio E. Sandoval  
 Joseph M. Scar-borough  
 "J" "W" Scharpf, jr.  
 Charles F. Schlegel  
 David N. Schroer  
 Henry A. Schulze, jr.  
 Peter A. Schwartz  
 Benedict J. Scott  
 Bob Scott, jr.  
 Jack Scott  
 Walter A. Scott  
 William J. Scott  
 Arthur W. Seaman  
 Bernard Sevilla  
 Richard M. Shay  
 Wesley R. Shaw  
 Donald H. Sherlock  
 Robert A. Shields  
 William T. Shippe  
 William G. Shores  
 James E. Shortall  
 Frank S. Siddall  
 James D. Sidwell, jr.  
 Orville S. Sigurdson  
 Arthur R. Silrola  
 David Silver  
 Paul H. Simdars  
 Russell W. Sims, jr.  
 William H. Skinner  
 Bayard K. Smith  
 Franklin L. Smith  
 George N. Smith  
 John C. Smith  
 Alvin A. Sobel  
 Willis L. Somervell, jr.  
 Richard L. Soncrant  
 Frank H. Sonntag  
 Samuel A. Sparks  
 Norman W. Spurgeon  
 James M. Stacy  
 Leonard M. Stafford  
 Sam D. Stafford

Harold E. Padgett  
 William S. Palmer  
 Jacob S. Paretsky  
 Clarence L. Paraley  
 Emanuele Passanisi  
 Donald G. Patterson  
 George W. Peck  
 John R. Peck  
 Russell Peck  
 Joe Pedigo  
 Edward W. Peeler  
 Samuel R. Pepe  
 Harry W. Peterson  
 Lester W. Peterson  
 Frank P. Petrik  
 Rudolph L. Pettiet  
 Robert F. Pettitt  
 John H. Pfeil  
 Glenn E. Phillips  
 Morris G. Pickard  
 Evan W. Pickrel  
 Max A. Piper  
 Shelly B. Pittman  
 Ferdinand J. Plumer  
 Arthur G. Pollasky  
 Albert J. Pope  
 John E. Porter, jr.  
 Carol W. Powell  
 Roland D. Powell  
 Winfred R. Prescott  
 Howard W. Price  
 Warren R. Prosser  
 Russell K. Prout  
 Paul E. Pugh  
 Robert W. Ramey  
 Bob Randle, jr.  
 William A. Rawls  
 John E. Raymond  
 Thomas F. Reddy  
 Jack W. Redmond  
 Robert W. Reeve  
 George J. Reeves  
 Maynard A. Reid  
 Ralph M. Reimer  
 Mehl B. Renner  
 Thomas T. Reynburn  
 Claude M. Reynolds  
 Adrian B. Rhodes, jr.  
 Robert L. Rice  
 John D. Richardson  
 Nelson W. Richard-son  
 Maurice H. Richey  
 Warren C. Richison  
 Richard H. Ridgway  
 George B. Riley  
 Peter Rippla  
 John D. Robb  
 Jack H. Rohcke  
 Carlton B. Roberts  
 Kester M. Roberts  
 Oliver W. H. Robert-son, jr.  
 Elwood H. Robinson  
 Bob J. Robison  
 Allen R. Rogers  
 Robert K. Rosemont  
 Edwin R. Ross  
 John M. Ross  
 Walter L. Roth  
 William E. Roy  
 Paul L. Ruch  
 Edward J. Rucinski  
 Chester E. Ruffin  
 James F. Rumford  
 "J" "B" Louie Run-yan

Donald C. Staley  
 Charles E. Standard  
 Robert Stanek  
 David S. Stear  
 DeWayne H. Stegner  
 Charles F. Stelneger, jr.  
 Joseph E. Stenstrom  
 James C. Stevenson  
 James E. Stevenson  
 Clark Z. Stewart  
 Donald J. Stewart  
 Graham D. Stewart  
 Jamie "B" Stewart  
 Marlar E. Stewart  
 Ramsey McD. Stew-art  
 Melvin O. St. John, jr.  
 James F. Stone  
 Monte E. Stone  
 Harry J. Stoner  
 Robert A. Straub  
 Edward J. Sullivan  
 James M. Sullivan  
 Robert C. Sullivan  
 Harry J. Sundberg  
 Donald A. Swanson  
 Allen W. Sweeten, jr.  
 Harry W. Swinburne, jr.  
 George Swint, III  
 John E. Swint  
 Alfred Taddeo  
 Sam Takis  
 Carl B. Tanner, jr.  
 Hugh J. Tate  
 Neal M. Tate, jr.  
 Gordon LeR. Taylor  
 James D. Taylor  
 Robert E. Taylor  
 Robert P. Taylor  
 John E. Tefft  
 Sylvan L. Tenberg  
 William P. Terrill  
 Ray F. Thiele  
 John E. Thigpen  
 Charles J. Thornton  
 Arthur R. Thorp  
 Albert R. Tiffany  
 William W. Timmis, jr.  
 John K. Titus  
 James F. Todd  
 Elsworth B. Tojek  
 John A. H. Torry, jr.  
 Eugene P. Townsen  
 Frederick J. Tuck  
 Nimrod H. Tucker  
 Jack A. Turner  
 James F. Tuttle  
 John E. Tuttle  
 Robert J. Underwood  
 Allan R. Vaatveit  
 Edward P. Van Hise, jr.  
 Thomas Van Inwagen  
 John W. Vaughn  
 Ray A. Voipi  
 Harold K. Von Egger  
 William J. Wacker  
 John R. Wagner, jr.  
 Delmar Walker, jr.  
 Gwin L. Walker  
 Ralph LaR. Walker  
 Howard K. Wallace  
 Ralph McE. Wallace  
 Milton K. Walsh  
 Harold Walsweer  
 Herbert N. Walters  
 Horace B. Walton  
 Edward M. Ward  
 Marshall D. Ward  
 Gerald B. Wardlow  
 Wilbur W. Warlick  
 Richard Wathall  
 Jack O. Watson  
 Nathan G. Watson  
 Paul R. Watters  
 Herbert C. Weart  
 Raymond D. Webb  
 Richard E. Webb  
 Eric H. Weiland  
 Richard McM. Wen-zell  
 Ira B. West  
 William J. Westmore-land  
 Thomas R. Wheaton  
 Jack E. Whillans  
 Stewart F. White  
 Ciro N. V. Whited, jr.  
 Ralph S. Whitworth, jr.  
 William L. Wilkinson  
 Clement G. Williams  
 Henis J. Williams  
 Henry J. Williams  
 Richard Williams  
 Robert E. Williams  
 Thomas St. C. Wil-lams  
 David S. Williamson  
 Harry A. Wilson, jr.  
 Paul E. Wilson, jr.  
 Warren W. Winberg  
 Ralph K. Wines, jr.  
 Benjamin G. Wisner  
 Francis J. Wolf  
 Stanley A. Wood  
 Edward C. Wood-ward  
 Robert C. Woolverton  
 John D. Working  
 Richard L. Wright  
 Robert C. Wright, jr.  
 Vernon M. Wright  
 Elmer G. Yesko  
 Ralph J. Zender  
 Eugene J. Zepp  
 John A. Zink

### \* The Locators

(Army—Address: The Locators, P. O. Box 537, Ft. Leavenworth, Kan.)

THE Locators have requests for the addresses of the following army officers and army officers' wives. We should appreciate your sending any you know to Box 537, Fort Leavenworth, Kans.

Mrs. Kenneth L. Akins (Mattie Belle), Maj., deceased; Mrs. H. C. Barnes, jr. (Kay), Col. CAC; Mrs. Joseph X. Bell (Mur-el "Johnny"), Maj., AC, deceased; Mrs. H. H. Bourne, Capt. MC; Mrs. Joseph V. Dillon, Brig. Gen. JAGD; Mrs. Owen R. Durham, Lt. Col. GSC; Mrs. Amberson Hansen, Maj.; Mrs. Charles F. Henstey, Maj., CAC; Mrs. David Louis Henderson (Mildred), Capt. or Maj.; Mrs. Donald Hickok, Capt. AAF; Mrs. Jewett, wife of Col. Jewett, deceased Manila '34; Mrs. John G. Kearby, Major AG, deceased; Mrs. Ralph Lincoln (Ellnor), Col. Engineers; Mrs. Maynard G. Mayer, Lt. CAC; Mrs. Colby Myers (Olive), Col. Engineers; Mrs. Kelley Nemick (Mae or Frances), Maj.; Mrs. George R. Norris (Nell), Capt. FA; Mrs. Thomas W. Sharkey, Lt. CAC; Mrs. Harry Ray Smith (Lillian), Maj.; Mrs. Michael Sult, Maj. DC; Mrs. Clifford Templeton, Lt. Col. 705 TD Bu., deceased; Mrs. E. B. Thompson, Col. CAC; Lt. Robert L. Henning, last known address AGF Repl. Depot 2, Ft. Ord, Calif.; Lt. Frank Robertson; Capt. Wesley F. Wallace, AC.

### New Office Created

The Office of Assistant to the Surgeon General for Inspection has been created with Rear Adm. George C. Thomas (MC), USN-Ret., in charge, Vice Adm. Ross T. McIntire (MC), USN, Surgeon General, announced.

Rear Admiral Thomas will be relieved as head of the Professional Division in the Bureau by Rear Adm. John Harber (MC), USN.

The Surgeon General's Assistant for Inspection will review, appraise and make recommendations on all inspection reports of naval medical activities, including the Marine Corps, effectuate recommendations approved by the Surgeon General and maintain liaison with divisions and offices of the Bureau of Medicine and Surgery.



## U. S. COAST GUARD

### Awards and Decorations

**Distinguished Service Cross**  
\*Col. Harry A. Flint, USA, (OLC), Com. Officer 39th Infantry Regt.

#### Distinguished Service Medal

On 18 Sept. 1945, the Secretary of War, the Hon. Henry L. Stimson, presented the Distinguished Service Medal to the following: Under Secretary of War Robert P. Patterson, Asst. Secretary of War John J. McCloy, Asst. Secretary of War for Air, Robert A. Lovett, and Special Asst. to the Secretary of War Mr. Harvey H. Bundy.

Rear Adm. G. F. Bogan, USN, Comdr. with Carrier Task Forces of U. S. Pacific Fleet.  
Commo. W. S. Parsons, USN, Development of Atomic Bomb.

Maj. Gen. C. L. Hyssong, USA, Work as G-1 since May 1943.

Col. R. L. Gow, ASF, Chief Industrial Services Div., War Dept.—Bureau of Public Relations.

Maj. Gen. A. W. Kenner, USA, (OLC), Ch. Medical Officer, AEF.

Brig. Gen. R. A. McClure, USA, (OLC), Chief Psychological Warfare Div., Supreme Hqs., AEF.

Brig. Gen. E. B. Howard, USA, Asst. Ch. of Staff, G-2 Hqs., Fifth Army.

Brig. Gen. E. H. Lastayo, USA, Transportation Sect., AF Hqs.

Brig. Gen. J. I. Martin, USA, Surgeon, Fifth Army.

Brig. Gen. C. A. Saltzman, USA, Deputy Ch. of Staff, Fifth Army and American Deputy Ch. of Staff, Fifteenth Army Group.

Brig. Gen. C. S. Shadle, USA, Ch. Chemical Of., Allied Force Hq., and Chemical Officer, Hqs. Mediterranean Theater of Op.

Col. J. B. Sherman, GSC, Deputy Ch. of Staff Supreme Hqs.

Maj. Gen. A. D. Surles, Director Bu. Public Relations, War Dept.

#### Navy Cross

Commo. R. N. Smoot, USN, Battle of Surigao Strait, Leyte Gulf, P. I.

\*Pfc. J. C. Buh, USMC, gave his life to save wounded comrade at Salpan.

#### Legion of Merit

Brig. Gen. Royal Reynolds, USA, Col. R. F. Bradish, MC, Col. J. C. Fitzpatrick, MC, Col. J. T. O'Connell, GSC, Lt. Col. M. B. Chatfield, Ord., Maj. Paul Losick, CWS, Capt. E. L. Knutson, CE, 2nd Lt. Edd Rhoades, Inf., Maj. Gen. C. J. Hyssong, USA, \*Col. H. A. Flint, Inf., Col. W. H. Kyle, Col. K. R. Kreps, AAF, Capt. W. O. Bailey, USN, (GS), Capt. N. W. Pickering, USN, Comdr. F. C. B. McCune, USN, Col. W. L. Bayer, SC, Rear Adm. Van Hubert Ragsdale, USN, (GS), Col. Bernat Balchen, AAF, Maj. Gen. Daniel Noce, USA, Comdr. J. W. Ryssay, USCG.

#### Silver Star

Commo. Dixie Klefer, USN, Com. Officer of Ticonderoga in Far Western Pacific.

\*Col. H. A. Flint, Inf., (OLC), \*1st Lt. R. T. Meskeil, Inf., Maj. Theodore Olsen, USMC, \*Capt. C. R. Durfee, USMC, \*Cpl. M. G. Robbins, USMC, \*Cpl. C. C. Winkler, jr., USMC, \*Cpl. W. B. Brecher, USMC, \*Pfc. R. H. Quisenberry, USMC, \*Pfc. J. W. Bloomfield, USMC, \*Pfc. A. P. Gibbs, USMC, \*Pfc. T. E. Richards, USMC.

#### Bronze Star

Cpl. W. H. Barker, MD, Lt. Comdr. L. B. Teallaksen, USCG, CBM G. A. Fortier, USCG, Lt. J. D. Robertshaw, USCG, Lt. G. A. Phillips, USCG, CM E. E. Lewis, USCG, Lt. Comdr. T. R. Sargent, USCG, Lt. Col. J. K. Borneman, ChC., Lt. Col. M. F. McNickle, AAF, Maj. A. W. Fonseca, SC, Maj. Matthew Levine, MC, Maj. C. E. Steyer, MC, Maj. R. K. Whitely, MC, Capt. J. J. Shurtz, MC, 1st Sgt. C. T. Godsey, Inf., 1st Sgt. Alfred Kroetzsch, MD, T. Sgt. H. J. Brice, SC, T. Sgt. J. J. Fletcher, AAF, S. Sgt. C. L. Mackie, SC, Sgt. J. E. Elliott, AAF, Cpl. G. G. Pearson, AAF.

### NAVAL UNIFORM DIRECTORY

The following store, officially designated by the Navy Department, carries blue overcoats; service blue uniforms; raincoats (with removable lining); aviation (winter working) uniforms for purchase by Naval Commissioned, Warrant and Petty Officers. The garments are in accordance with Naval specifications and are marked with a label stating "This label identifies a garment made and sold under authority of the U. S. Navy."

OHIO

### THE HALL BROS. CO.

1228 Euclid Avenue  
Cleveland, Ohio

NEW YORK

### SAKS FIFTH AVENUE

MILITARY AND NAVAL OUTFITTERS  
AT ROCKEFELLER CENTER, NEW YORK  
OTHER SHOPS AT: 111 St. Broadway, N. Y.  
COLUMBUS, GA.; MIAMI BEACH, FLA.;  
PENSACOLA; NEW HAVEN - WASHINGTON  
Mail orders filled. Request our Army or Navy book

**PICTURING** a scene on the Luzon beach, a beautifully executed memorial will soon be completed to symbolize the work of the United States Coast Guard men and women in World War II.

Executed by Chief Specialist Norman Thomas, the memorial will be placed in an appropriate sea coast town. Funds for the erection of the memorial will be obtained through solicitation among Coast Guard personnel.

The memorial will be life size, and will depict two coast guards men aiding a wounded soldier on the beach at Luzon.

#### Loran Stations

Although little publicized, it can now be revealed that bomb-laden B-29's in their bombing missions over Japan and on their return to home bases, were guided by Loran Stations established and maintained in the far reaches of the Pacific by Coast Guard Personnel.

Also revealed is the fact that the Coast Guard organized Construction Detachments composed specifically of trained officers and men to erect the Loran Stations. These Coast Guard "CD's" comparable to the Navy's "Sea Bees," often entered with invasion forces in order to expedite constructions.

Loran, it is explained, stands for Long Range Aid Navigation, and up until recently, like Radar, was shrouded in secrecy.

Pfc. N. J. Lev, MD, and Pfc. R. V. Strasters, MD.

#### Distinguished Flying Cross

2nd Lt. C. R. Jarrett, USMC, Shooting down 2 Japanese planes attacking convoy off Philippine Islands.

Maj. Theodore Olsen, USMC, Shooting down Japanese plane off Philippine Islands.

#### Air Medal

Lt. P. R. Anderson, USNR, (GS), \*ACMM F. A. Cernek, USN, ACMM J. R. Fitzpatrick, USN, ACMM A. W. King, USNR, ACMM L. O. MacLean, USN, ARM 1c J. B. Oubre, jr., USN, \*AP 1c A. E. Jurca, USN, ARM 1c W. P. Merck, USNR, ARM 1c L. F. Pelletier, USN, \*ARM 3c C. H. Baker, USNR, \*AOM 3c O. A. Chaney, USN, Ens. J. T. McCormick, USCG.

#### Soldier's Medal

Maj. Benjamin Dickstein, MC, M. Sgt. F. M. Redmond, AAF, M. Sgt. T. D. Tucker, AAF, T. Sgt. C. R. Hart, AAF, S. Sgt. W. J. Skora, AAF, Sgt. E. G. Harrison, AAF, Sgt. L. H. Jervis, AAF, \*Sgt. P. M. Stewart, AAF, Cpl. S. Barlow, AAF, Cpl. B. B. Hartley, AAF, Cpl. S. R. Jarowski, AAF, Cpl. Emil Lonkar, AAF, Cpl. R. W. Talbot, AAF, Cpl. J. L. Tomlin, AAF, Cpl. J. R. Turner, AAF, Pfc. W. J. Facenda, AAF, Pvt. R. C. Krebs, jr., AAF.

#### Navy and Marine Corps Medal

S 2c J. R. Tiller, USCG and Lt. (jg) R. H. H. Pain, USCG.

#### Letters of Commendation

Lt. Catherine Richardson, (NC) USN, Meritorious service as Chief Nurse aboard a U. S. Hospital Ship.

Rear Adm. B. H. Wyatt, USN, Com. Officer of USS Chenango during battle of French Morocco from 8 to 11 Nov. 1942.

Lt. Comdr. J. F. Sonnett, USNR, Special Asst. to Secretary of Navy.

Capt. H. A. Guthrie, USN, Distinguished himself by excellent service as CO of U. S. Ship.

#### Foreign Decorations

Lt. Col. S. W. Wells, AAF, awarded the Philippine Liberation Ribbon by Maj. Gen. Basilio Valdes, Ch. of Staff, Philippine Army.

The following two U. S. Airmen were decorated by the Republic of China as follows:

Col. B. K. Holloway, AAF, Presented the Bao Ding (Precious Trined) Medal.

Col. C. R. Fox, AAF, Presented the Cloud and Banner Medal.

\*Posthumous Award.

#### Guns as Souvenirs Only

Under Secretary of War Patterson this week cautioned war veterans and their families against the use of captured enemy weapons sent home as souvenirs. He advised that such guns should be used as souvenirs only unless the owner has the advice of a thoroughly competent expert on small arms.

"Aside from the specially trained ordnance units, few soldiers are familiar with intricacies of manufacture and repair of the weapons they use and they know even less about enemy weapons," Mr. Patterson said. "For this reason, my advice is to keep souvenir guns as souvenirs and not to shoot or remodel them without the advice of a competent expert."

#### Coast Guard Association

Plans for the formation of a post-war association of Coast Guard personnel to be known as the Coast Guard League are rapidly getting under way.

Initiated last year, and then forced to lie dormant until recently, the National organization will be headed by Rear Adm. Lloyd T. Chalker, Assistant Commandant of the Coast Guard, who will act as National Commander.

At present and since its reactivation, it is estimated that the new organization has a membership of 2,000 in sixteen established chapters. In addition and exclusive of the present membership plans are underway for the establishment of 15 more chapters.

Membership in the organization is open to enlisted personnel as well as Commissioned officers of the Regular Coast Guard, the Coast Guard Reserve, Coast Guard Temporary and the Coast Guard Auxiliary.

The League will have as its primary purpose the promotion of fellowship between Coast Guard personnel who have returned to civilian life and those who remain in the service. In addition the League proposes to further the interests of the Coast Guard, observing its anniversaries and historical occasions, wherever possible, taking appropriate action for the welfare of the Coast Guard veterans and their dependents.

#### Ship and Unit Citations

The following ships and units have been awarded the Presidential Unit Citation to 15 Aug. 1945:

USS Alchiba  
USS Archerfish  
USS Atlanta  
USS Barb  
USS Bernadon  
Bomb. Sq. 104  
Bomb. Sq. 100  
USS Bowfin  
USS Buchanan  
USS Cavalla  
USS Cole  
USS Dallas  
Des. Sq. 23 (consisting of:  
USS Charles Ausburne  
USS Claxton  
USS Dyson  
USS Spence  
USS Converse  
USS Stanle  
USS England  
USS Enterprise  
First Marine Division (Reinforced)  
USS Flasher  
Fourth Marine Division (Reinforced)  
USS Greenling  
USS Gudgeon  
USS Haddock  
USS Harder  
USS Houston  
USS Laffey  
USS LCI(L) One  
LCT(5) 30  
USS LCT 540  
USS LCS(L) 31  
USS LCS(L) 51  
USS LCS(L) 57  
USS McFarland  
Marine Aircraft Grp. 22  
USS Maury  
Motor Torpedo Boat Sq. 12  
Motor Torpedo Boat Sq. 21  
USS Nautilus  
Navy Combat Demolition Unit Force "O"  
USS Nicholas  
USS O'Bannon  
USS Parche  
Pat. Sq. 11  
Pat. Sq. 22  
Pat. Sq. 33  
Pat. Sq. 34  
Pat. Sq. 52  
Pat. Sq. 101  
Pat. Sq. 102  
USS Pigeon  
USS Queenfish  
USS Radford  
USS Rasher  
USS Redfish  
USS Sailfish  
USS Salmon  
USS Sand lance  
USS San Francisco  
USS Seahorse  
USS Sealion  
Second Marine Division (Reinforced) Division Headquarters; Special Troops (including Co. "C"); 1st Corps Medium Tank Bn.; Service Troops; 2nd Marines; 6th Marines; 8th Marines; 10th Marines; 18th Marines; 18th U. S. Naval Construction Battalion.  
USS Silversides  
Sixth Anti-Submarine Task Groups, which operated with the USS Bogue as Flagship

## HOTEL DIRECTORY

### CALIFORNIA

**SAN FRANCISCO**  
**HOTEL Stewart**  
Down town on Geary St.  
above Powell. With bath \$2.50 to \$3.50 one person; \$3.50 to \$5.00 two persons; 10% discount to the Army and Navy. Advance reservations.

### MARYLAND

**SOUTHERN HOTEL**  
Baltimore's Foremost  
Centrally Located  
Headquarters of ARMY and NAVY Officers  
Baltimore Maryland

### WASHINGTON, D. C.

**BRIGHTON HOTEL**  
2125 California St.  
Washington, D. C.  
Modern Fireproof  
Apartment Hotel  
Newly Furnished  
Excellent Dining Room  
R. H. FATT, Mgr.

**HOTEL MARTINIQUE**  
SIXTEENTH STREET AT M  
WASHINGTON, D. C.  
Easily accessible to new War and Navy Buildings.  
10% Room discount to officers on Active Duty  
Every Room with Bath. Write for Detailed information.  
L. R. Hawkins, Manager



THE War Department gave a reception Wednesday afternoon in honor of the retiring Secretary of War and Mrs. Stimson, the gathering being held from five to seven o'clock at Dumbarton Oaks, former home of the former United States Ambassador to the Argentine and Mrs. Robert Woods Bliss, and the place where the preliminary peace conferences were held. Now the property of Harvard University, Mr. Stimson's Alma Mater, Dumbarton Oaks is one of the finest estates in Washington, in the Georgetown section—once the home of Henry Clay and the residence where the Marquis de Lafayette paid one of his American visits.

The newly designated Secretary of War and Mrs. Robert P. Patterson were present and the recipients of many congratulations, as both are well liked. Mrs. Patterson, as a member of the "Little Cabinet," has been a popular hostess and member of society. Strangely enough, it was at the home of Secretary and Mrs. Stimson that Washington society had its introduction to Mrs. Patterson, as at an at-home at Woodley, their historic estate, she presided at one end of the reception table, back in 1940, when she first came to Washington, her husband, Judge Patterson having been persuaded by the late President Roosevelt to become Assistant Secretary of War. Their home is near that of the late President at Hyde Park, and she and their younger children have just returned to their Georgetown home here, after spending the Summer at their Dutchess County farm.

The reception was held in the double-storied drawing room with its painted and beamed Florentine ceiling, its massive Caen stone fireplace, priceless tapestries and tall windows leading to a stone terrace and the verdant greenery of the vast estate.

At the foot of the stone steps leading to this sunken room the receiving line stood headed by the newly appointed Secretary of War, Mr. Robert Patterson and his wife; next the Chief of Staff, General Marshall, and Mrs. Marshall, then the retiring Secretary, Mr. Stimson, and Mrs. Stimson. Col. Merrill Pasco secretary of the General Staff made the introductions.

Mrs. Patterson was smartly gowned in black with the bodice of white splashed with black leaves and sequins with a small black hat and a purple orchid on her shoulder.

Mrs. Marshall was also in black, the upper part of ciel blue, feathers of the same delicate shade ornamenting her small hat, and she wore a sable scarf across her shoulders. Mrs. Stimson chose black and pink figured crepe for her gown and a black hat ornamented with one pink rose.

A three piece section of the Army Air Forces Band played an obligato to the

## SERVICE SOCIAL NEWS



MISS MARGARET WIRT WHITE, daughter of Col. and Mrs. Samuel White, FA, USA, whose engagement has been announced to 1st Lt. Billy Neill Banister, AAF, son of Col. and Mrs. John R. Banister, of Austin, Texas.

conversation that filled the big room, and a buffet table and bar drew many to the terrace without.

Mrs. Stanley Embick, who accompanied the General recalled that in this very room the Dumbarton Oaks conference in which her husband participated were held. While the Army prevailed, mufti was also in evidence as Cabinet officers and some gentlemen from the Hill mingled with the throng in khaki, and Fleet Admiral William D. Leahy and Fleet Admiral Ernest J. King in Navy blue gave a contrasting accent.

Capt. and Mrs. William H. Watson are giving an afternoon party today in compliment to Capt. and Mrs. Willard Smith at their apartment at the Shoreham. Capt. Willard, who went through the Bataan March of Death, is with Mrs. Smith a guest of Comdr. and Mrs. Frederick Witt.

Col. Lucius K. Patterson, MC, who has just returned from the Pacific, after eighteen months with the XI Corps, has been assigned as Post Surgeon, Fort Bliss, Texas. Colonel Patterson's son, Lt. Lucius K. Patterson, Jr., home from the European Theater, is now at Fort Jackson, (Please turn to Page 144)

### Weddings and Engagements

At four o'clock Friday afternoon, 14 Sept. at the Protestant Chapel of Presidio of San Francisco, a wedding ceremony united two Navy families of long standing, when Miss Mary Margaret MacKerracher became the bride of Ens. Edgar Hamilton Doolin, Jr., of Annapolis, Md.

She is the daughter of Capt. Robert A. MacKerracher, USN, and Mrs. Sara Webb MacKerracher. A graduate of Holton-Arms, in Washington, she later was a student at Goucher College, Baltimore, and is a member of Pi Beta Phi Sorority.

Ensign Doolin was reared and educated at Annapolis and graduated from the U. S. Naval Academy in the class of 1945. He is the son of Comdr. and Mrs. Edgar Hamilton Doolin. Mrs. Doolin was formerly Miss Claude Willcox, of Annapolis.

Commander Doolin is on duty at present at an advanced post in the Pacific and could not attend his son's wedding. Mrs. Doolin came from Annapolis to San Francisco to be present. Miss Catherine Doolin, a student at Greenbrier, also attended and was maid of honor at the wedding. The matron of honor was Mrs. Mrs. George A. Grayeb, an aunt of the bride.

Ens. Robert Hogsd was best man and Ens. R. Clancy and Ens. Malcolm Fortson were ushers. These three were classmates of the groom at Annapolis.

The ceremony was read by Col. James Miles Webb, chaplain, retired, and grandfather of the bride.

After the wedding a reception was held at the Officers' Club at Hunter's Point.

Ens. Margaret Ellen Wyatt, daughter of Mr. and Mrs. George Wyatt, of Mebane, N. C., was married Saturday, 15 Sept., to Lt. Col. James Blair Glennon, Jr., USMC, son of Capt. James B. Glennon, USN, of the Naval Powder Factory, Indian Head, Maryland, and Mrs. Glennon. The wedding took place at St. James Episcopal Church, Indian Head, and was followed by a small reception at the WAVE Officers' Quarters there. Ens. Jeanne Lejeune Glennon, sister of the bridegroom, was maid of honor. Capt. Robert Walters, USMC, was best man.

Upon return from their wedding trip Lt. Col. and Mrs. Glennon will live at Camp Lejeune, N. C., where he is now stationed.

The bride was graduated from North Carolina State College at Greensboro and attended Smith College. Lt. Col. Glennon, grandson of the late Lt. Gen. John A. Lejeune and Mrs. Lejeune of Norfolk, Va., also the grandson of the late Rear Admiral James H. Glennon and Mrs. Glennon of Washington, D. C., was graduated from the U. S. Naval Academy.

Miss Jane Sedgwick Pratt, daughter of Mrs. Selby Harney Frank, was married at four o'clock, on the afternoon of 7 September to Donald Valney Rattan, USA.

The service was held at 2212 Wyoming Avenue, the home of her cousin, Chaplain (Brig. Gen.) George F. Rixey, and was followed by a reception.

The bride's only attendant was her matron of honor, Mrs. Hugh Douglas Wallace, who makes her home in Fort Worth, Texas, while Colonel Wallace is

overseas.

Lt. Edward Dravo, recently returned from duty overseas was best man for Lieutenant Rattan.

The bride was given in marriage by General Frank. She wore a soft blue suit with matching hat and brown accessories, and carried a small Victorian bouquet of sweetheart roses.

Lt. Rattan is the son of Col. and Mrs. Donald William Rattan, Colonel Rattan is now on duty in the Philippines.

Mrs. Harry Bower Somerville of 203 West Anderson St., Hackensack, N. J., and Cumberland, Md., announces the engagement of her daughter Jean Lowe Somerville to Col. Alexander Maccomb Miller, 3rd, U. S. Cav. (West Point Class 1927).

Col. Miller is the son of Mrs. Alexander Maccomb Miller of 1717 G St., Washington, D. C., and the late Col. Alex. M. Miller, Jr.

No definite plans for the wedding have been made, as Col. Miller has just returned to duty in the Pacific Area.

Capt. and Mrs. George C. Dyer, USN, of Chevy Chase, Md., announce the engagement of their daughter Lt. (Jg) Mary Elizabeth, (W) USNR, to Capt. Brownlee Sands Corrin, AUS, son of Mr. and Mrs. John G. Corrin of Los Angeles, Calif. The wedding will take place after Capt. Corrin's return from duty overseas.

Announcement is made of the marriage of Lt. (Jg) Margaret Cameron Farquhar Jackson, USNR, daughter of Mr. and Mrs. James Jackson of Brooklyn, N. Y., to Lt. Robert Francis McComas, Chaplain Corps, USN, son of Mrs. Beatrice McComas of Spencer, Mass., and the late Mr. Ralph McComas. The ceremony took place at the Naval Communications Annex Chapel, Washington, D. C., on 10 Sept.

Rear Adm. William N. Thomas, Chief of Chaplains, USN, officiated at the 6:30 P. M. ceremony. The bride was given in marriage by her father.

Lt. Elizabeth Jackson Culbertson, USNR, Naval Supply Depot, Bayonne, N. J., sister of the bride, was matron of honor. The bridesmaids were Lt. (Jg) Kathleen McDermott of New York and Lt. (Jg) Virginia Ryals of Glenwood, Ga., shipmates of the bride.

Lt. Glovis A. Frame Chaplain, USN, Newport, R. I., served as best man. The ushers were Lt. Julian P. Moorman, Chaplain, USN, of Bristol, Va., and the Rev. Marion S. Michael of Silver Springs, Md.

Elizabeth Goetze, Sp1c(W), was organist and Betty Warman (Sp1c(Q), of Columbus, Ohio, sang "Beloved It Is Morn" and "The Lord's Prayer."

Following the ceremony a reception was held at the Shoreham Hotel in Washington.

Mrs. McComas, a graduate of Barnard College, Columbia University, class of '43, joined the WAVES in August of that year. On completion of her training she was assigned to the Naval Communications Annex, Washington, D. C.

Chaplain McComas is a graduate of Clark University and Boston University School of Theology. He entered the Navy in June 1942 and served on the USS Minneapolis in the Pacific. Since his return he has been stationed at the Naval Com-

(Please turn to Page 144)

## THE FULFILLMENT OF A DREAM



General James Harbord first thought of it...told the President of the Del Monte Properties Company what a wonderful place the Monterey Peninsula might be for officers in the service to retire to. Close to the historic Monterey Presidio, with a healthful, year-round climate, it offers every facility for sports and social activities.

The outgrowth of the General's suggestion was the Monterey Peninsula Country Club, now having a membership of approximately 400, including many retired officers. Members are elected; then purchase home sites and memberships at average costs of \$1,000 to \$1,500, with dues of \$5.00 per month.

Full details upon request

**MONTEREY PENINSULA COUNTRY CLUB**  
DEL MONTE ★ CALIFORNIA

## THIS FAMOUS SCHOOL COMES TO YOUR CHILD

Your child may receive sound schooling through the successful home-study courses of Calvert School. Widely used by service families. Kindergarten through 9th grade. Catalog on request.

### CALVERT SCHOOL

190 E. Tuscany Road, Baltimore 10, Md.

### A Beautiful Gift Each Month For Her

Simply send her name and address with:

\$12 FOR 6 MONTHS (6 GIFTS)

\$23 FOR 12 MONTHS (12 GIFTS)

**Gift-Of-The-Month Club**

475 FIFTH AVE. Dept. 6 NEW YORK 17, N. Y.

### FINCHLEY

566 Fifth Avenue, New York  
Army and Navy Officers Uniforms and accessories.

19 E. Jackson Blvd., Chicago  
Hotel Robert Driscoll  
Corpus Christi, Texas



Commanding Officers—Please Note! Special Prices on Quantity Orders  
**50¢ PER SET** On orders for 10 or more sets.  
Any quantity shipped within 48 hours. For quick action—send list and remittance by special delivery air mail.

### Your Own Serial Number Stamp With Ink Pad

The safest, easiest way to mark laundry and clothes! Guaranteed not to wash off! Genuine enamel handle stamp with SPONGE RUBBER BASE to give perfect impression! Prints clearly initial and last four figures of serial number in letters 1/2 inch high. Indelible ink impregnated pad, good for over 2,000 markings, eliminates mess of re-inking. Both sent postpaid anywhere in U. S. A. or Overseas for . . .

**Only 75c Set Agents Wanted**  
**BRANDT Mfg. Co.**  
54 W. 21st ST., N. Y. C., 10



## Posts and Stations

NOFOLK, VA.  
20 September, 1945

Mr. and Mrs. William John Cotton announce the engagement of their daughter, Miss Ruth Elizabeth Cotton, to Lt. Robert D. Forth, USNR, son of Mr. and Mrs. Fred Forth of Morrison, Ill. The wedding will take place 28 Sept. in the Baptist Tabernacle, Norfolk.

Mrs. Jannette Conlin, of Kansas City, Mo., announces the engagement of her daughter, Lt. Mary Jane Conlin, ANC, to Lt. Guy Herr Foster, AAF, son of Mrs. Mildred Pentress Foster and W. Gordon Foster, of Norfolk. Lt. Conlin is a graduate of Corwin Hospital, Pueblo, Colo. Lt. Foster attended the College of William and Mary in Norfolk, and Bowman's Technical School, in Lancaster, Pa. He has recently returned from the India-China-Burma campaign. The wedding will take place in October.

The engagement of Lt. Eunice Ayers, WAC, to Lt. Edward J. Burns, USA, son of Mr. and Mrs. Edward J. Burns, of San Francisco, Calif., has just been announced by Mrs. Etta Ayers, of this city. Lt. Ayers is now stationed at Camp Lee, where she is executive officer of the headquarters WAC department. No date has been set for the wedding.

Miss Sue Claypool entertained Friday afternoon at her home in the Naval Operating Base members of the Chi Omega Sorority, in honor of the new students who entered the college of William and Mary this week. The party was in the nature of a tea and the hours for calling were from 3 to 5 o'clock.

Chaplain and Mrs. Michael J. Kippenbrock left Thursday to spend several days in Alexandria, Baltimore and Bel Air, Md. Chaplain Kippenbrock has recently returned from overseas duty in Italy.

## LONG BEACH, CALIF.

16 September, 1945

Happy reunions have featured the week for Capt. George J. McMillin, USN, the last governor of Guam, who is home from incarceration in several Japanese prison camps for nearly four years. Greeting him a week ago at the local airport were Mrs. McMillin, who left Guam the autumn of 1941, and has been maintaining a home at 324 Carroll Park, West; their son, Pvt. George J. McMillin, Jr.; their daughter, Miss Anne McMillin, a student at Mills College; Mrs. William P. Mack, their older daughter, and her young son, Bill Mack, Jr., whose father, Comdr. Mack, has overseas duty. Capt. McMillin was found at Hotten Camp, near Mukden, Manchuria.

During a sojourn in Coronado, Rear Adm. A. K. Doyle and Mrs. Doyle were shown a number of social courtesies by friends. Mrs. C. J. Peoples, widow of Rear Adm. Peoples, who has been residing for some time in Long Beach, has gone back to Washington, D. C., accompanied by her son-in-law and daughter, Comdr. and Mrs. J. T. Bullen and their two children. Mrs. Peoples is visiting relatives and friends while the Bullens are in Virginia.

Mrs. Turner Joy, wife of Rear Adm. Joy, has left for a month's sojourn in the nation's capital. Mrs. A. D. Burnhans has also gone to Washington for a stay of several weeks. She is the wife of Capt. Burnhans, USN, and has been residing in Coronado.

Recent assignment of Capt. John E. Fradd to the East Coast presages a trip to Washington, D. C., for Mrs. Fradd and their three children. The officer returned recently from duty in the Southwest Pacific, where he served on Adm. Kincaid's staff.

The welcome mat is out in Long Beach for Capt. Walter Simpson (MC) USN, since a change of orders brought him back to his former post as chief of medicine at the Naval Hospital in Long Beach. Accompanied by Mrs. Simpson, Villa Riviera is once more the headquarters of the popular couple and their daughter, June, who is to leave this autumn for her sophomore year at the University of Michigan.

Mrs. H. B. Edgar, wife of Capt. Edgar, USN, entertained as house guests over a recent week-end Capt. and Mrs. B. O. Wells and their sons, Donald and John, who came up from Coronado. Capt. Wells has new duty in the Southland area.

## CAMP LEE, VA.

17 September, 1945

Maj. Gen. Phillip Hayes, commanding gen-

eral, 3rd Service Command, combined the roles of principal speaker at graduation exercises of officer candidate class No. 53 with the decoration of a hero soldier and the first officer to cover the Leido road, along with six other military awards at Quartermaster School ceremonies 14 Sept.

Introduced by Col. L. L. Cobb, school commandant, as "a personality exemplifying the cooperation between citizen and soldier that this country enjoyed during the war years," General Hayes declared that the responsibilities which the new second lieutenants assumed were "those of a good citizen, crystallized, and a matter of highest personal honor and integrity." He paid tribute to the training record of Camp Lee in assuring the graduates that the impact of that training would never leave their lives.

Preceding the graduation Gen. George A. Horkan, commanding general, Camp Lee, read the citations presented by General Hayes to six officers and two enlisted men. For heroism involving the voluntary risk of life, T/S Nelson C. Davidson, Kalamazoo, Mich., received the Soldiers' Medal in recognition of his saving of aircraft set on fire when an enemy plane crashed on an American airfield in China.

The Yun-hui decoration from Generalissimo Chiang Kai-shek, president of the Chinese National Government, was presented to Col. Dewitt T. Mullett, executive officer, Camp Lee.

Camp Lee certificates of meritorious conduct were presented to Maj. Leonard D. Mitchell, Director ASF Depot Officers' Division; Maj. Jack A. Farthing, Director Officer Candidate Division; Maj. Walter F. R. Haigh, Officer in Charge, Instructor Training and Guidance Section; Capt. Chess Abernathy, Jr., Officer in Charge, QM Training Service Journal Branch; 1st Lt. Bernard W. Recknagel, Director of Field Training, A. P. Hill Military Reservation, and M. Sgt. George W. Haas, Chief Clerk, School Supply & Service Department.

Maj. Chester Moeglein, school regiment commander, presented the Quartermaster Association award to honor candidate Ernest J. Eaton, and the second award to James M. Murphy.

## ANNAPOLIS, MD.

17 September, 1945

Mrs. Hamilton, widow of Comdr. Donald Hamilton, USN, arrived last week to visit her sister and brother-in-law, Vice Admiral and Mrs. Aubrey W. Fitch at the Superintendent's quarters, Naval Academy, who recently have had as their guest their son, Lt. Omar C. Fitch.

Capt. William Larson, USN, has returned to duty in San Francisco after spending leave with his family at their home on College Avenue. Mrs. Larson will join her husband on the West Coast in about two weeks.

Mrs. Roland Curtin has returned after visiting her brother-in-law and sister, Admiral and Mrs. Charles E. Courtney at their home at Sayville, L. I.

Lt. Trenholm Hopkins, AUS, is spending a month's leave with his parents, Dr. and Mrs. Walton Hopkins, at their home on Maryland Avenue. Lt. Hopkins is at present a patient in Walter Reed Hospital, having been seriously wounded at Luxembourg last winter. Dr. and Mrs. Hopkins also have visiting them their daughter, Mrs. Slack, wife of Comdr. Leslie Slack, and their granddaughter, Lila Slack.

Mrs. Pottle, wife of Capt. Valentine Pottle, USN, of Washington, was the guest last week of her parents, Monsieur and Madame Bas-set, at Carvel Hall.

Col. and Mrs. James G. Taylor entertained last Saturday night at their home in Eastport, celebrating Colonel Taylor's birthday.

Commo. Edward Lloyd, USN, entertained at a cocktail party last Sunday afternoon at his home on Prince George Street.

Comdr. Edward Foster, USN-Ret., who has been on duty at the Naval Academy for the last four years, and Mrs. Foster left last week to visit their daughter, Miss Sally Foster, at Vassar College. Later Comdr. and Mrs. Foster expect to make their home near Plainfield, N. J.

Mrs. Holt, wife of Capt. Walter Holt, USN, and her two daughters, the Misses Harriet and Brooke Holt, returned to their home on Prince George Street last week after spending several weeks' vacation in Vermont.

## FORT BLISS, TEX.

12 Sept. 1945

Lt. Gen. Walton H. Walker, Commanding General, Eighth Service Command, and Mrs. Walker were honored with a cocktail party at the Fort Bliss Officers Club, 31 Aug. Occasion of the festivity was General Walker's first official visit to Fort Bliss. Army Service Forces officers at the Post were hosts for the affair. Approximately 250 guests called during the cocktail hour. In the receiving line were Col. Frank L. Whitaker, Post Commander, General and Mrs. Walker, Mrs. Whitaker, and Maj. Donald W. Allard, General Walker's aide. Later in the evening, General Walker was the guest of Maj. Gen. G. Ralph Meyer, commanding general of the Antiaircraft Command, Fort Bliss, at a dinner party.

Col. and Mrs. William B. Caldwell entertained for Col. and Mrs. James L. Hayden and Col. and Mrs. Milo G. Cary with a small supper party at the Fort Bliss Officers Club on 9 Sept. Col. and Mrs. Cary recently arrived for duty at Fort Bliss, while Col. and Mrs. Hayden were visiting El Paso from West Point, N. Y. Close friends of the honored couples made up the guest list.

Mr. and Mrs. D. B. Jackson of Oklahoma City have announced the wedding of their daughter, Zola, to Lt. James Peacock of Fort Bliss, son of Mr. and Mrs. Charles Peacock of San Antonio, Tex. The double ring ceremony, held 29 Aug. in Las Cruces, N. M., was followed by a wedding dinner in El Paso, Tex.

The bride wore a gold suit with white carnation corsage. Her attendant was Miss Pollyanna Peacock of San Antonio, sister of the bridegroom. Miss Peacock wore a gray suit with white accessories and a corsage of white carnations.

Pfc. Sidney Williams, member of the bridegroom's command, was best man. The bride was educated in Oklahoma State College for Women. Lt. Peacock was educated in San Antonio.

## FORT JACKSON, S. C.

14 Sept. 1945

Headquarters, First Army, at Fort Jackson since early July, will leave for Fort Bragg, N. C. for a permanent change of station. It was announced here today. The First Army, it was stated will remain under the command of General Courtney Hodges, who is reported enroute from the Pacific where on 2 Sept. he witnessed Japanese surrender ceremonies aboard the USS Missouri.

For exceptionally meritorious service in the European Theater of Operations, the Legion of Merit medal was presented Lt. Col. Kenneth P. Lord, Jr., G-3 of V Corps in ceremonies at corps headquarters here last week.

## Army and Navy Journal

September 22, 1945

143

Maj. Gen. Clarence R. Huebner, until recently commander of V Corps made the presentation prior to departing for a new assignment in Washington. Col. Lord, originally from Brooklyn, N. Y. and son of Brig. Gen. Kenneth P. Lord of Governor's Island, went overseas in 1942 and participated in the invasions of North Africa, Sicily and Normandy. He also was in the Northern France, Ardennes, Rhineland and Western Germany campaigns. In addition to the Legion of Merit, Colonel Lord wears the Bronze Star with Oak-Leaf cluster.

A group of officers of V Corps are studying flying in their spare moments at the municipal airport at nearby Columbia. Capt. Edward Snowdon was the first officer to start the course, the first to solo. Others approaching their solo flights are Maj. George Percy, Maj. Joseph Fischer, Maj. Frederick E. St. John, Jr., Capt. Chas. C. George, Capt. Robert Wentworth and Lt. Herbert M. Reynolds. Studying the course with her husband is Mrs. Frederick St. John, Jr.

Maj. Merica Grissom is officer in charge of the army recruiting station established here this week. Enlistment of 70,000 men in the Fourth Service command is the goal of the recruiting program just launched.

Two new chaplains were added to the Station Complement roster this week. Chaplain (Capt.) Howard M. Kinlaw and Chaplain (1st Lt.) Urban A. Moss, both of Baptist denomination. Captain Kinlaw recently returned from a year's service as a regimental chaplain with the 103rd Division in the ETO. Chaplain Moss served for four months overseas with the 26th Division.

## Pre-Flight's Football

Varsity football at three United States Navy pre-flight schools will be abandoned.

North Carolina's "Cloudbusters," at Chapel Hill, N. C.; Georgia's "Skycrackers," at Athens, Ga., and Iowa's "Seahawks," at Iowa City, Iowa, all of which have been powers on the gridiron since the start of the war, have cancelled their schedules as a result of voluntary withdrawals of air cadets from training and a probable reduction in Naval Aviation training.

The fourth pre-flight team, St. Mary's "Airdevils," at Moraga, Calif., will again be represented in football. It is planned to maintain aviation training at St. Mary's at the present level.



## as A Vacationer--as A Resident!

And right now is a good time to begin, or extend, our friendship! The flaming fall foliage, crisp yet sunny days and hazy-blue mountain panoramas add up to happy, healthy living unsurpassed!

As you know, the Army chose Asheville as a chief redistribution center: Perhaps you, certainly some of your friends, thus learned first-hand of the delights of this great outdoors playground. We were honored to have you as a guest; we'll welcome you even more as a permanent resident. Many Army and Navy folk have already decided to call Asheville "home"; we invite you to look toward the same wise decision. Please call on us for any information you may desire!

MAIL THIS  
COUPON NOW

NAME .....

ADDRESS .....

for illustrated booklet  
and details on Asheville,  
up in "The Land  
of the Sky."



Write Box A-N, Silver Springs, Fla. for FREE photo story.



### Society

(Continued from Page 142)

S. C., in the process of redeployment. Lt. Patterson is with Headquarters of the 1st Army.

Maj. Gen. George F. Moore, Mrs. Moore and Miss Anne Moore, are at the Hotel Mar Monte, Santa Barbara, Calif. General Moore was recently liberated from a Japanese prison camp.

Mrs. Harold R. Jackson and daughter, Jeanne, are living at The Chancery, 3130 Wisconsin avenue, N. W., Washington 16, D. C., until General Jackson's return from overseas.

Mrs. Daniel Noco and her daughter, Mrs. Phillip B. Melody, are leaving their duration home in Falmouth, Mass., next week. They will join General Noco, who has been stationed in Washington since he returned from overseas recently, at their new home at Fort Myer, Va. Colonel Melody is still overseas with the aviation engineers in Germany.

Another of the popular gatherings of the Officers' Wives' Club of Long Beach, Calif., was held on 5 Sept. at the Army and Navy Club. Card games followed the luncheon and business session over which Mrs. Willis W. Bradley, Jr., presided. Mrs. H. Page Smith, senior hostess for the day, was assisted by Mesdames C. E. Staalheber, T. W. Davidson, Harold Larner, J. E. Flynn, W. A. Gerth, J. L. Herlihy, J. S. Littig, J. D. Parks, Robert Randle and M. W. Graybill.

Members of the executive board present were: Mrs. W. W. Bradley, Jr., President; Mrs. A. C. Woods, 1st Vice President; Mrs. G. F. Cottle, 2nd Vice President; Mrs. R. F. Featherstone, Treasurer; Mrs. W. S. Peck, Jr., Assistant Treasurer; Mrs. Scott D. McCaughey, Corresponding Secretary, and Mrs. H. Larner, Recording Secretary.

Chairmen of the various activities of the club are: Mrs. M. H. Bassett, Hospitality; Mrs. J. S. Clarkson, Assistant Hospitality; Mrs. M. W. Graybill, Publicity, and Mrs. W. R. Moore, Hospital Recreation Committee.

Mrs. Leslie J. McNair, widow of General McNair, who has been on a mission in South America and Mexico for the State Department, has returned to Washington.

After a summer spent in Rehoboth Beach, Mrs. Willard A. Holbrook, wife of Brig. Gen. Holbrook, now in Austria, has, with her children, returned to Washington, and after spending a brief time with her parents, Maj. Gen. and Mrs. John E. Herr, is located in her own home in Spring Valley. Mrs. Herr and Miss Fanny Herr have returned from a visit at the Lodge in Williamsburg, Va.

Lt. Gen. J. Lawton Collins, commander of the VII Corps in Europe, has come to Washington as Chief of Staff, Army Ground Forces. He and Mrs. Collins are occupying quarters at the Army War College. Their daughter, Nancy, has entered Vassar, and their son, Cadet Collins, is a first classman at the U. S. Military Academy.

Maj. Gen. Christiansen, former Chief of Staff for AGF, has left on an overseas assignment, and Mrs. Christiansen expects to leave the War College the first of the month and reside in an apartment in near-by Virginia.

Visiting at the Christiansen home are Brig. Gen. and Mrs. Joe Tate, he recently back from Italy, and their daughters, Margo and Joan. They are planning to move into the home of Gen. and Mrs. Collins, made vacant by the latter's move to the War College.

Maj. Gen. and Mrs. Paul Hawley have come to reside in the Capital and are located on Thirty-sixth Place, N. W. Gen. Hawley, MC, overseas for a long time, has been assigned to the Veterans' Bureau. Also assigned to the Veterans' Bureau is their son, Lt. Bill Hawley and with his wife he has found a residence in Washington.

There will be a concert in the garden

of the British Embassy tomorrow afternoon for the benefit of the District Department, Disabled American Veterans. It will be sponsored by the St. Andrews Society of Washington, with the British Ambassador and the Countess of Halifax heading the list of sponsors.

Col. and Mrs. George W. Cocheau entertained at a six o'clock party at their home in Foxhall Road last Sunday afternoon.

### Weddings and Engagements

(Continued from Page 142)

munications Annex and WAVE Quarters D, Washington, D. C.

In a ceremony at 8:30 P. M. Friday, 7 Sept., in the Randolph Field Chapel, Miss Clara Marjorie Holmes, daughter of Col. and Mrs. Ralph E. Holmes of Randolph Field, became the bride of Maj. Edward Allen Van Dyke, son of Mrs. Alice Van Dyke of Kalamazoo, Mich. Chaplain Clark O. Hitt officiated.

Opalescent satin fashioned the bride's gown. A Marie Antoinette coronet of imported lace held secure the finger-tip-length veil of bridal illusion.

Mrs. Eminger Stewart of Palo Alto, Calif., cousin of the bride, was matron of honor, and Misses Martha Ann Myer of Birmingham, Ala.; Jane Burns of Fort Worth, and Maxine Hendersdorf of Lubbock were the bridesmaids.

The bridegroom's attendants were Lt. Col. Walter E. Clark, best man; Lt. Col. Alan F. Adams, Maj. James Hall and Capt. Marvin Bradfield Oxford, groomsmen.

Sgt. Donald Willing, organist, played the nuptial music.

At the reception held in the Officers' Club, Mesdames Walter E. Clark and William T. Clarke were in charge of the bride's book. Serving the cake were Mesdames Joseph Benson, John L. Nedwed and Chester B. Kilpatrick. At the punch bowl were Mesdames John A. Tarro, Clarence M. Sartain and Francis Truesdale. Also assisting were Mesdames Barthold E. Nowotny and Harold D. Parks.

After a trip to Houston and New Orleans the couple will be at home at Sunset Hills, San Antonio, Texas.

Capt. Robert H. Edger, USA, son of the late Col. Benjamin J. Edger, took as his bride Miss Mary Anne Hofstinger, daughter of Mr. and Mrs. Evarest Hofstinger of Louisville, Ky., on the 29th of August, the wedding taking place in Louisville, and the bride being attended by her cousin, Miss Peggy Shelley of Louisville. The bridegroom had as best man Major Henry Urrutia, his classmate at the United States Military Academy, from which he was graduated in the class of 1941. Capt. Edger has served in the Southwest Pacific thirty-three months and is now detailed in the Ordnance Department and is stationed at Aberdeen, Md.

Mrs. Edger is a graduate of Stephens College, the University of Louisville, and of the National Academy of Design in New York.

Invitations are out for the wedding of Miss Beverly Covell, daughter of Maj. Gen. and Mrs. W. E. R. Covell, and Lt. James Frank Ferguson, USNR, with the ceremony to take place at St. Albans Church in the Cathedral Close and a reception to follow at the Shoreham in Washington.

Miss Virginia Claire Joyner, daughter of Lt. Col. Ralph Leslie Joyner, USA-Ret., and Mrs. Joyner, was married to Capt. Julian Maxwell Humphries, AUS, son of Mr. and Mrs. Charles Hilliard Humphries of Wallhalla, S. C., Tuesday morning, 4 Sept., in Holy Trinity Episcopal Church in Gainesville, Fla., the ceremony being performed by the Rev. Francis B. Wakefield, Jr., rector of the church, before an altar abloom with white asters and gladioli lighted by cathedral tapers.

### Development of Atomic Bomb

(Continued from Page 139)

Standardization of Assay Methods  
Development of Assay Methods  
Shielded Apparatus for Process Control  
Assays  
Cloud Chamber Experiment  
Alpha Particles from U-235

### Radial Product Distribution Diffraction of Neutrons

#### The Hanford Plant

8.50. It is beyond the scope of this report to give any account of the construction of the Hanford Engineer Works, but it is to be hoped that the full story of this extraordinary enterprise and the companion one, the Clinton Engineer Works, will be published at some time in the future. The Hanford site was examined by representatives of General Groves and of du Pont at the end of 1942, and use of the site was approved by General Groves after he had inspected it personally. It was on the west side of the Columbia River in central Washington north of Pasco. In the early months of 1943 a two-hundred-square-mile tract in this region was acquired by the government (by lease or purchase) through the Real Estate Division of the Office of the Chief of Engineers. Eventually an area of nearly a thousand square miles was brought under government control. At the time of acquisition of the land there were a few farms and two small villages, Hanford and Richland, on the site, which was otherwise sage-brush plains and barren hills. On the 6th of April, 1943, ground was broken for the Hanford construction camp. At the peak of activity in 1944 this camp was a city of 60,000 inhabitants, the fourth largest city in the state. Now, however, the camp is practically deserted as the operating crew is housed at Richland.

8.51. Work was begun on the first of the Hanford production piles on 7 June, 1943, and operation of the first pile began in September 1944. The site was originally laid out for five piles, but the construction of only three has been undertaken. Besides the piles, there are, of course, plutonium separation plants, pumping stations and water-treatment plants. There is also a low power chain-reacting pile for material testing. Not only are the piles themselves widely spaced for safety—several miles apart—but the separation plants are well away from the piles and from each other. All three piles were in operation by the summer of 1945.

#### Canning and Corrosion

8.52. No one who lived through the period of design and construction of the Hanford plant is likely to forget the "canning" problem, i.e., the problem of sealing the uranium slugs in protective metal jackets. On periodic visits to Chicago the writer could roughly estimate the state of the canning problem by the atmosphere of gloom or joy to be found around the laboratory. It was definitely not a simple matter to find a sheath that would protect uranium from water corrosion, would keep fission products out of the water, would transmit heat from the uranium to the water, and would not absorb too many neutrons. Yet the failure of a single can might conceivably require shut-down of an entire operating pile.

8.53. Attempts to meet the stringent requirements involved experimental work on electroplating processes, hot-dipping processes, cementation-coating processes, corrosion-resistant alloys of uranium, and mechanical jacketing or canning processes. Mechanical jackets or cans of thin aluminum were feasible from the nuclear point of view and were chosen early as the most likely solution of the problem. But the problem of getting a uniform, heat-conducting bond between the uranium and the surrounding aluminum, and the problem of effecting a gas-tight closure for the can both proved very troublesome. Development of alternative methods had to be carried along up to the last minute, and even up to a few weeks before it was time to load the uranium slugs into the pile there was no certainty that any of the processes under development would be satisfactory. A final minor but apparently important modification in the preferred canning process was adopted in October 1944, after the first pile had begun experimental operation. By the summer of 1945, there had been no can failure reported.

#### Present Status of the Hanford Plants

8.54. In the course of the fall of 1944 and the early months of 1945 the second and third Hanford piles were finished and put into operation, as were the additional chemical separation plants. There were, of course, some difficulties; however, none of the fears expressed as to canning failure, film formation in the water tubes, or radiation effects in the chemical processes, have turned out to be justified. As of early summer 1945 the piles are operating at designed power, producing plutonium, and heating the Columbia River. The chemical plants are separating the plutonium from the uranium and from the fission products with better efficiency than had been anticipated. The finished product is being delivered. How it can be used is the subject of Chapter XII.

#### The Work on Heavy Water

8.55. In previous chapters there have been references to the advantages of heavy water as a moderator. It is more effective than graphite in slowing down neutrons and it has a smaller neutron absorption than graphite. It is therefore possible to build a chain-reacting unit with uranium and heavy water and thereby to attain a considerably higher multiplication factor,  $k$ , and a smaller size than is possible with graphite. But one must have the heavy water.

8.56. In the spring of 1943 the Metallurgical Laboratory decided to increase the emphasis on experiments and calculations aimed at a heavy water pile. To this end a committee was set up under E. Wigner, a group under A. A. Vernon was transferred from Columbia to Chicago, and H. D. Smyth, who had just become associate director of the Laboratory, was asked to take general charge. (As it turned out, this group was active for only about six months.)

8.57. The first function of this group was to consider in what way heavy water could best be used to insure the overall success of the Metallurgical Project, taking account of the limited production schedule for heavy water that had been already authorized.

8.58. It became apparent that the production schedule was so low that it would take two years to produce enough heavy water to "moderate" a fair-sized pile for plutonium production. On the other hand, there might be enough heavy water to moderate a small "laboratory" pile, which could furnish information that might be valuable. In any event, during the summer of 1943 so great were the uncertainties as to the length of the war and as to the success of the other parts of the DSM project that a complete study of the possibilities of heavy-water piles seemed desirable. Either the heavy-water production schedule might be stepped up or the smaller, experimental pile might be built. An intensive study of the matter was made during the summer of 1943 but in November it was decided to curtail the program and construction was limited to a 250kw pile located at the Argonne site.

#### The Argonne Heavy-Water Pile

8.59. Perhaps the most striking aspect of the uranium and heavy-water pile at the Argonne is its small size. Even with its surrounding shield of concrete it is relatively small compared to the uranium-graphite piles.

8.60. By 15 May, 1944, the Argonne uranium and heavy-water pile was ready for test. With the uranium slugs in place, it was found that the chain reaction in the pile became self-sustaining when only three-fifths of the heavy water had been added. The reactivity of the pile was so far above expectations that it would have been beyond the capacity of the control rods to handle if the remainder of the heavy water had been added. To meet this unusual and pleasant situation some of the uranium was removed and extra control rods were added.

8.61. With these modifications it was possible to fill the tank to the level planned. By 4 July 1944 W. H. Zinn reported that the pile was running satisfactorily at 190kw, and by 8 August 1944 he reported that it was operating at 300kw.

8.62. In general the characteristics of this pile differed slightly from those of comparable graphite piles. This pile takes several hours to reach equilibrium. It shows small (less than 1 per cent) but sudden fluctuations in power level, probably caused by bubbles in the water. It cannot be shut down as completely or as rapidly as the graphite pile because of the tendency of delayed gamma rays to produce (from the heavy water) additional neutrons. As anticipated, the neutron density at the center is high. The shields, controls, heat exchanger, etc., have operated satisfactorily.

#### The Health Division

8.63. The major objective of the health group was in a sense a negative one, to insure that no one concerned suffered serious injury from the peculiar hazards of the enterprise. Medical case histories of persons suffering serious injury or death resulting from radiation were emphatically not wanted.

8.64. To achieve its objective the health group worked along three major lines:

(1) Adoption of pre-employment physical examinations and frequent re-examinations, particularly of those exposed to radiation.  
(2) Setting of tolerance standards for radiation doses and development of instruments measuring exposure of personnel; giving advice on shielding, etc.; continually measuring radiation intensities at various locations in the plants; measuring contamination of clothes, laboratory desks, waste water, the atmosphere, etc.

(3) Carrying out research on the effects of direct exposure of persons and animals to various types of radiation, and on the effects of ingestion and inhalation of the various radioactive or toxic materials such as fission products, plutonium and uranium.

#### Routine Examinations

8.65. The white blood-corpuscle count was used as the principal criterion as to whether a person suffered from overexposure to radiation. A number of cases of abnormally low counts were observed and correlated with the degree of overexposure. Individuals appreciably affected were shifted to other jobs of given brief vacations; none have shown permanent ill effects.

8.66. At the same time it was recognized that the white blood-corpuscle count is not an entirely reliable criterion. Some work on animals indicated that serious damage might occur before the blood count gave any indication of danger. Accordingly, more elaborate blood tests were made on selected individuals and on experimental animals in the

(Please turn to Page 147)



gical  
hairs  
at a  
ditee  
nder  
mbia  
just  
tory,  
As it  
only

was  
ould  
ccess  
ount  
eavy  
l.  
duc-  
take  
er to  
nium  
ight  
mall  
i in-  
any  
great  
f the  
parts  
tudy  
plies  
eavy-  
pped  
ight  
atter  
at in  
pro-  
60kw

et of  
Ar-  
sur-  
ively  
hite

nium  
With  
that  
self-  
the  
ivity  
ions  
acity  
nder  
meet  
e of  
ntrol

pos-  
ned.  
t the  
0kw,  
was

this  
par-  
eral  
mall  
ions  
bles  
com-  
pile  
mma  
ad-  
tron  
elds  
nted

eaith  
in-  
ious  
en-  
sons  
ting  
uted.  
alth

sical  
ions.  
tion.  
dia-  
ents  
ad-  
ring  
s in  
of  
e at-

fects  
is to  
fects  
ions  
sion

was  
ther  
adi-  
low  
the  
pre-  
s or  
per-

ized  
not  
t on  
ight  
in-  
lab-  
ndi-  
the

pl  
M  
te  
F  
S  
te  
H  
to  
a  
pl  
T  
so  
lu  
Y  
W  
B  
P  
Y  
A  
M  
C  
la  
M  
P  
F  
L  
L  
Y  
cl  
F  
Y  
J  
cl  
N  
M  
J  
in  
M  
L  
F  
pl  
19  
(M  
M  
be  
F  
an  
A  
Y  
A  
pl  
C  
so  
C  
Y  
B  
E  
H  
to  
Q  
S  
de  
II  
va  
to  
de  
H  
to  
de  
H  
C  
de  
H  
J  
H  
p  
1  
a  
G  
1  
F  
G  
U  
C  
F  
L  
T

rgioni  
phalls  
at a  
nittee  
under  
ambia  
just  
atory,  
As it  
only

o was  
could  
ccess  
count  
heavy  
ed.

oduc-  
take  
ter to  
nium  
might  
small  
h in-

any  
great  
of the  
parts  
study

plies  
heavy-  
pped  
might  
atter

ut in  
pro-  
50kw

et of  
Ar-  
sur-  
lively  
phite

nium  
With  
that  
self-

the  
divity  
tions  
ecity  
nder

meet  
e of  
ontrol

pos-  
ned,  
the  
0kw,  
was

this  
par-  
ernal  
small

ions  
bles  
com-  
pile

mma  
ad-  
tron  
elds,  
nted

alth  
in-  
ous  
en-  
sons

ting  
ated.  
alth

sical  
ons,  
lon.  
dia-

ad-  
ring  
in  
of

at-  
ects  
s to  
ects

ous  
ion

was  
her  
di-  
low

the  
re-  
of  
er-

red  
not  
on  
ght

in-  
ab-  
di-  
the

**AL**  
pital,  
Maj.  
ter.

**BA**  
Ft. S  
Sgt. I  
ter, I

**BA**  
Hosp  
to 2n  
a dat

**BE**  
pital,  
T. Sg  
son,

**BN**  
lumb  
York  
Willi  
Bing  
Potte

**BL**  
York  
Alex  
MacC

**BL**  
Comm  
land,  
Mrs.  
Field

**BO**  
Ft. S  
Lt. a  
Lind

**BO**  
York  
cis  
Fran

**BU**  
York  
Jame  
child

**CA**  
New  
Mrs.  
John

**CA**  
ingto  
Mrs.  
Lew  
Folz

**CO**  
pital  
1945,  
(MC)

**CO**  
Miss  
bert

**CO**  
Ft. S  
and  
Anth

**CE**  
York  
Amb

**DE**  
pital  
Capt  
son,

**ES**  
Colu  
York  
Bent  
Elai

**GA**  
Hos  
to 1  
QMO

**GO**  
Sept  
don,  
III.

**GO**  
val  
to 1  
don,

**GI**  
Hos  
to 1  
dau

**GI**  
Hos  
Cap  
dau

**H**  
Hos  
Jes  
Han

**H**  
pit  
1st  
a so

**H**  
Gen  
194  
FA  
Gen  
US  
US  
Chi

**H**  
Ft.  
Lon  
The



# Births • Marriages • Deaths

(No charge for service announcements. Please notify promptly.)

**ALLEN**—Born at Walter Reed General Hospital, Washington, D. C., 14 Sept. 1945, to Maj. and Mrs. Charles G. Allen, CE, a daughter.

**BANGS**—Born at Brooke General Hospital, Ft. Sam Houston, Tex., 9 Sept. 1945, to M. Sgt. and Mrs. Wilbur Louis Bangs, a daughter, Diana Jean Bangs.

**BARBRE**—Born at Walter Reed General Hospital, Washington, D. C., 12 Sept. 1945, to 2nd Lt. and Mrs. Joseph G. Barbre, CE, a daughter.

**BERLANGA**—Born at Brooke General Hospital, Ft. Sam Houston, Tex., 8 Sept. 1945, to T. Sgt. and Mrs. Raoul Armand Berlanga, a son, Charles Raoul Berlanga.

**BINGHAM**—Born at Harkness Pavilion, Columbia-Presbyterian Medical Center, New York, N. Y., 13 Sept. 1945, to Lt. and Mrs. William L. Bingham, AUS, a son, William L. Bingham, Jr., grandson of Capt. Eugene W. Potter, AUS.

**BLACK**—Born at New York Hospital, New York City, 12 Sept. 1945, to Lt. (jg) and Mrs. Alexander Black, USNR, a daughter, Nancy MacCrae Black.

**BLACKHURST**—Born at North Country Community Hospital, Glen Cove, Long Island, N. Y., 12 September 1945, to Col. and Mrs. L. R. Blackhurst, Jr., AAF, of Mitchell Field, N. Y., a daughter.

**BOHLS**—Born at Brooke General Hospital, Ft. Sam Houston, Tex., 9 Sept. 1945, to 1st Lt. and Mrs. Louis Flinck Bohls, a daughter, Linda Louise Bohls.

**BOYLE**—Born at Polyclinic Hospital, New York City, 14 Sept. 1945, to Lt. and Mrs. Francis William Boyle, AAF, a son, William Francis.

**BUTLER**—Born in Doctors Hospital, New York City, 13 Sept. 1945, to Lt. and Mrs. James Butler, ATC, a daughter, their second child.

**CAMPBELL**—Born at Doctors Hospital, New York City, 10 Sept. 1945, to Comdr. and Mrs. Hugh Morgan Campbell, USNR, a son, John Morgan Campbell.

**CARR**—Born at Garfield Hospital, Washington, D. C., 12 Sept. 1945, to Comdr. and Mrs. Bruce L. Carr, USN, a daughter, Susan Lewis, granddaughter of Capt. Arthur F. Folz, USN.

**COATES**—Born at Brunswick Private Hospital, Amityville, Long Island, N. Y., 3 Sept. 1945, to Comdr. and Mrs. William A. Coates, (MC) USNR, a daughter, Marion Falt Coates.

**COLVIN**—Born at Keesler Field, Biloxi, Miss., 5 Sept. 1945, to WO and Mrs. John Albert Colvin, Jr., a son, John Albert III.

**COPP**—Born at Brooke General Hospital, Ft. Sam Houston, Tex., 8 Sept. 1945, to 2nd Lt. and Mrs. Nelson Gage Copp, a son, Emanuel Anthony Copp.

**CRAM**—Born at Woman's Hospital, New York, N. Y., 14 Sept. 1945, to Capt. and Mrs. Ambrose L. Cram, Jr., FA, AUS, a son.

**DESAIX**—Born in Walter Reed General Hospital, Washington, D. C., 19 Sept. 1945, to Capt. and Mrs. Pierry F. DeSaix, Inf., a son, Peter.

**ESKESEN**—Born at Harkness Pavilion, Columbia-Presbyterian Medical Center, New York, N. Y., 16 Sept. 1945, to Lt. and Mrs. Bennett H. Eskesen, USNR, a daughter, Elaine Chatillon.

**GALLAWAY**—Born at Walter Reed General Hospital, Washington, D. C., 13 Sept. 1945, to 1st Lt. and Mrs. William H. Gallaway, QMC, a daughter.

**GORDON**—Born in Washington, D. C., 14 Sept. 1945, to Lt. and Mrs. John Dozier Gordon, Jr., USNR, a son, John Dozier Gordon, III.

**GORDON**—Born at US Naval Hospital, Naval Operating Base, Norfolk, Va., 9 Sept. 1945, to Lt. (jg) and Mrs. Robert Coningsby Gordon, USNR, a son, John Swan Gordon.

**GREEN**—Born at Walter Reed General Hospital, Washington, D. C., 12 Sept. 1945, to 1st Lt. and Mrs. James M. Green, CE, a daughter.

**GRENIQ**—Born at Los Cerritos Maternity Hospital, Long Beach, Calif., 23 Aug. 1945, to Capt. and Mrs. Robert E. Grenig, Inf., a daughter, Carolyn Jeanne.

**HARRIS**—Born at Norfolk (Va.) General Hospital, 6 Sept. 1945, to Lt. and Mrs. William Jesse Harris, a son, William Lawrence Harris.

**HARRISON**—Born at Brooke General Hospital, Ft. Sam Houston, Tex., 8 Sept. 1945, to 1st Lt. and Mrs. Benjamin Franklin Harrison, a son, Ben Frank Harrison.

**HEFEBOWER**—Born at Walter Reed General Hospital, Washington, D. C., 18 Sept. 1945, to Lt. Col. and Mrs. Roy C. Hefebower, FA, USA, a son, Charles Roy, grandson of General and Mrs. Roy G. Hefebower, MC, USA, and of Col. and Mrs. W. C. Koenig, USA. Lt. Col. Hefebower is on duty in China.

**HIGHTOWER**—Born at Regional Hospital, Ft. Knox, Ky., 7 Sept. 1945, to Col. and Mrs. Louis V. Hightower, USA, a daughter, Julia Tinsley.

**HUGHES**—Born at Leigh Memorial Hospital, Norfolk, Va., 9 Sept. 1945, to Lt. (jg) and Mrs. J. L. Hughes, Jr., a son, Edward Leonard Hughes.

**JAREMA**—Born at Walter Reed General Hospital, Washington, D. C., 18 Sept. 1945, to Capt. and Mrs. Andrew Jarema, CE, a daughter.

**LEARY**—Born in Georgetown Hospital, Washington, D. C., 2 Sept. 1945, to Lt. Comdr. and Mrs. Frederick J. Leary, Jr., USNR, a son, Charles Badger Leary, grandson of Rear Adm. and Mrs. Oscar C. Badger, USN.

**LUDDEN**—Born at Walter Reed General Hospital, Washington, D. C., 18 Sept. 1945, to Capt. and Mrs. Clemens Ludden, CAC, a son.

**MANLEY**—Born at Walter Reed General Hospital, Washington, D. C., 12 Sept. 1945, to Maj. and Mrs. Robert H. Manley, AAF, a son.

**MCCONNAUGHAY**—Born at San Diego, Calif., 29 Aug. 1945, to Lt. Comdr. and Mrs. L. W. McConnaughay, USNR, a daughter, Mary Lee.

**MCCONNELL**—Born at Walter Reed General Hospital, Washington, D. C., 18 Sept. 1945, to Lt. Col. and Mrs. Edward McConnell, GSC, a daughter.

**MITCHELL**—Born at Garfield Memorial Hospital, Washington, D. C., 12 Sept. 1945, to Brig. Gen. and Mrs. W. L. Mitchell, USA, a daughter, Susan Weldon Mitchell. Mrs. Mitchell is the former Miss Mary Virginia Rapp.

**MONTGOMERY**—Born at Brooke General Hospital, Ft. Sam Houston, Tex., 11 Sept. 1945, to Maj. and Mrs. William David Montgomery, a daughter, Joan Elizabeth Montgomery. (Member of the staff Brooke General Hospital.)

**MORRISON**—Born at Walter Reed General Hospital, Washington, D. C., 16 Sept. 1945, to Capt. and Mrs. William D. Morrison, QMC, a daughter.

**MUDGE**—Born at Johns Hopkins Hospital, Baltimore, Md., 12 Sept. 1945, to Cadet and Mrs. E. Tiltson Mudge, 3d, AAF, a son.

**MURPHY**—Born at Brooke General Hospital, Ft. Sam Houston, Tex., 10 Sept. 1945, to Capt. and Mrs. George Vincent Murphy, a son, George David Murphy.

**MUZZY**—Born at Harrisburg (Pa.) Hospital, 16 Sept. 1945, to Lt. and Mrs. Boyden E. Muzzy, USNR, a son, Jeffrey Boyden. Lt. Muzzy is on duty at Okinawa.

**NALLE**—Born at Johns Hopkins Hospital, Baltimore, Md., 13 Sept. 1945, to Capt. and Mrs. George S. Nalle, Jr., AAF, a son, George S. Nalle, III.

**NEDLAND-PEDERSEN**—Born at Newport (R. I.) Hospital, 10 Sept. 1945, to Lt. and Mrs. Olaf Nedland-Pedersen, Jr., USNR, a son, Olaf, grandson of Capt. and Mrs. Charles L. Austin, (SC) USN.

**NORMAN**—Born at Walter Reed General Hospital, Washington, D. C., 14 Sept. 1945, to Maj. and Mrs. Edgar C. Norman, a son.

**O'BRIEN**—Born at AAF Hospital, Hunter Field, Ga., 16 Sept. 1945, to Lt. Col. and Mrs. Frank L. O'Brien, AAF, a son, Michael Dennis O'Brien.

**PARKER**—Born at US Naval Hospital, Brooklyn, N. Y., 16 Sept. 1945, to Lt. Comdr. and Mrs. Henry Seabury Parker, Jr., USNR, their second son, Anthony Weyburn Parker.

**PELL**—Born in Garfield Hospital, Washington, D. C., 11 Sept. 1945, to Lt. and Mrs. Claiborne Pell, USCGR, a son, Herbert Claiborne Pell, II.

**PILLING**—Born in Denver, Colo., 12 Sept. 1945, to Lt. and Mrs. George Platt Pilling, 4th, MC, AUS, a daughter, Lucille Bachman Pilling.

**READ**—Born at Harkness Pavilion, Columbia-Presbyterian Medical Center, New York, N. Y., 15 Sept. 1945, to Lt. and Mrs. Edward C. K. Read, AUS, a son, Cameron Read.

**ROESSLER**—Born at Junction City Memorial Hospital, Kans., recently, to Lt. and Mrs. F. Linsley Roessler, of Fort Riley, Kans., a second daughter, Elizabeth Lyman Roessler.

**SCHENDEL**—Born at Walter Reed General Hospital, Washington, D. C., 14 Sept. 1945, to 1st Lt. and Mrs. Charles R. Schendel, AAF, a daughter.

**SIRIS**—Born at French Hospital, New York City, 11 Sept. 1945, to Lt. Comdr. and Mrs. Joseph H. Siris, (MC) USNR, a son, Michael John Siris.

**STEPHENSON**—Born at Walter Reed General Hospital, Washington, D. C., 14 Sept. 1945, to Capt. and Mrs. William Stephenson, DC, a daughter.

**STERLING**—Born at Washington Sanitarium and Hospital, Takoma Park, Md., 16 Sept. 1945, to Maj. and Mrs. Philip G. Sterling, Jr., a daughter, Martha Louise.

**TAYLOR**—Born at Regional Hospital, Fort Monmouth, Red Bank, N. J., 7 Sept. 1945, to Capt. and Mrs. L. L. Taylor, SC, AUS, a daughter, Lois Lynn Taylor.

**TREADWELL**—Born at Brooke General Hospital, Ft. Sam Houston, Tex., 10 Sept. 1945, to M. Sgt. and Mrs. Alston Grim Treadwell, a son, Terry Blue Treadwell.

**TUCKER**—Born at Walter Reed General Hospital, Washington, D. C., 14 Sept. 1945, to Capt. and Mrs. William A. Tucker, SC, a son.

**UCHIDA**—Born at Brooke General Hospital, Ft. Sam Houston, Tex., 10 Sept. 1945, to M. Sgt. and Mrs. Ken Uchida, a son, Donald Ray Uchida.

**VANDERBILT**—Born in House of Mercy Hospital, Pittsfield, Mass., 14 Sept. 1945, to Capt. and Mrs. William H. Vanderbilt, USNR, a son. Capt. Vanderbilt is the former governor of Rhode Island.

**VAN DEUSEN**—Born at Walter Reed General Hospital, Washington, D. C., 16 Sept. 1945, to 1st Lt. and Mrs. Edmond Van Deusen, a daughter.

**VAN ORDEN**—Born at Columbia Hospital, Washington, D. C., 13 Sept. 1945, to Lt. and Mrs. Louis J. Van Orden, Jr., AUS, a daughter.

**WATSON**—Born at Columbia Hospital, Washington, D. C., 29 Aug. 1945, to Lt. and Mrs. William Wirth Watson, USNR, a son, William Wirth Watson, III.

**WILLIAMS**—Born at Woman's Hospital, New York City, 7 Sept. 1945, to Capt. and Mrs. William G. Williams, ATC, a daughter, Beatrice Barbara Williams.

**WING**—Born at Army Regional Hospital, Fort Benning, Ga., 19 Aug. 1945, to 1st Lt. and Mrs. Robert V. Wing, AC, a son, William Robert, grandson of Col. and Mrs. Julian H. Gist, Inf., USA. Lt. Wing is on duty in the Pacific area.

## Married

**BEACH-SESSIONS**—Married in the home of her grandparents at Bristol, Conn., 15 September 1945, Miss Janet Helen Sessions to Lt. Warren Hammond Beach, AAF.

**BIDDLE-HAWES**—Married in the chapel of the US Naval Hospital, Naval Operating Base, Norfolk, Va., 31 August 1945, Miss Mary Lou Hawes to Lt. Richard W. Biddle, USNR.

**BUCKWALTER-JENKINS**—Married in Pinkney Memorial Church, Hyattsville, Md., 15 September 1945, Miss Eleanor Elizabeth Jenkins to Lt. Earl E. Buckwalter, USN (USNA '43).

**CANNON-HALL**—Married in St. Andrew's Church, West Kirby, England, 8 September 1945, Miss Margaret E. Hall, daughter of Mr. R. J. Hall, former Lord Mayor of Liverpool, to Lt. Comdr. Beckman Cox Cannon, USNR.

**CARPENTER-JORDAN**—Married in the Episcopal Church of St. Stephen, Coconut Grove, Fla., 13 September 1945, Miss Betty A. Jordan to Lt. (jg) William R. Carpenter, USNR.

**CAVERLY-SRILL**—Married in the Church of Our Lady of Sorrows, South Orange, N. J., 13 September 1945, Miss Jane Srill to Capt. Robert J. Caverly, ATC.

**COLBY-HEINZEN**—Married in Our Lady Chapel, St. Patrick's Cathedral, New York City, 15 September 1945, Miss Barbara Ann Heinzen to Maj. William Egan Colby, AUS.

**CORNFROT-BIELASKI**—Married at the home of the bride's parents at Great Neck, Long Island, N. Y., 17 Sept. 1945, Miss Jane Bielaski to Lt. William H. E. Cornfroth, AUS.

**CRANDALL-TUGWELL**—Married in New York City, 15 September 1945, Miss Marcia Tugwell, daughter of the Governor of Puerto Rico, Mr. Rexford Guy Tugwell, and Mrs. Tugwell, to 2nd Lt. William M. Crandall, Jr., AUS.

**CURTIS-WHELAN**—Married in Centerville, Mass., 11 September 1945, Mrs. Pauline Bell Whelan to Lt. Comdr. Harry L. Curtis, USNR.

**DEALY-LASELL**—Married in New York, N. Y., 15 September 1945, Miss Katherine S. Lasell, daughter of Capt. and Mrs. John W. Lasell, AAF, to Dr. James Bond Dealy, Jr.

**DOERFLER-HARRIS**—Married in the First Baptist Church, Norfolk, Va., 1 September 1945, Miss Alice Roberta Harris to Lt. (jg) Robert Arnold Doerfler, USNR.

**EDGER-NOFSINGER**—Married in Louisville, Ky., 29 Aug. 1945, Miss Mary Jane Nofsinger of Louisville to Capt. Robert H. Edger, Ord., USA (USMA '41), son of the late Col. Benjamin J. Edger, USA, recently returned to the United States after thirty-three months' duty in the Southwest Pacific Area.

**ETHERINGTON-HALL**—Married at US Submarine Base, Pearl Harbor, T. H., 21 Aug. 1945, Lt. (jg) Beverly Anita Hall, USNR, to Lt. Robert McK. Etherington, USNR.

**EVERHARD-BARTHLOW**—Married in Ft. Myer Chapel, Ft. Myer, Va., 19 Sept. 1945, Y 3c Betty G. Barthlow, USNR, daughter of

Lt. Col. and Mrs. David Friesel, AUS, to Capt. John A. Everhard, AUS.

**EYMAN-WHITCOMB**—Married in the Baptist Church, Sharon, Conn., 15 September 1945, Miss Leslie Whitcomb to 1st Lt. Carl E. Eymann, Jr., AUS.

**FLOOD-TEYBER**—Married in St. Albert the Great Church, Dayton, Ohio, 12 September 1945, Miss Kathleen F. Teyber to Lt. John T. Flood, AAF.

**FOARD-GILES**—Married in New Orleans, La., 10 September 1945, Lt. (jg) Mary Anne Giles, USNR, to Lt. Morehead Foard, AUS.

**FORTE-DEGNAN**—Married in the base chapel, Borinquen Field, Puerto Rico, 15 Sept. 1945, Miss Jeanne Joy Degnan to Lt. Albert James Forte, AAF.

**GLENNON-WYATTE**—Married in St. James Episcopal Church, Indian Head, Md., 15 September 1945, Enns. Margaret Ellen Wyattte, USNR, to Lt. Col. James Blair Glennon, Jr., USMC, son of Capt. and Mrs. James B. Glennon, USN, and grandson of Mrs. James H. Glennon of Washington, D. C., and the late Rear Adm. Glennon, USN, and of Mrs. John A. Lejeune, of Norfolk, Va., and the late Lt. Gen. Lejeune, USMC.

**GLOWA-CHRISTO**—Married in Our Lady of Consolation R. C. Church, Brooklyn, N. Y., 15 September 1945, Miss Adele Christo to Lt. Eugene Glowa, FA, AUS.

**GRANT-COOK**—Married at the home of the bride's parents in Alexandria, Va., 15 September 1945, Miss Barbara Ann Cook, daughter of Lt. Comdr. and Mrs. Vernon H. Cook, USNR, to Mr. Donald Henry Grant, III, of White Plains, N. Y.

**GULLORY-DUTTON**—Married in Our Lady of Lourdes Catholic Church, Bethesda, Md., 15 September 1945, Miss Hazel Marie Dutton to Lt. Yves Gullory, USNR.

**HAMSHAW-KIENDL**—Married in the Episcopal Chapel at Camp Adair, Ore., Capt. Jean Kiendl, WAC, to Capt. Samuel J. Hamshaw, AUS.

**HEILBRONNER-RANDALL**—Married in Broadway Tabernacle Church, New York City, 13 September 1945, Miss Jenn Randall, daughter of Brig. Gen. and Mrs. Russell E. Randall, USA, to 2nd Lt. Edmund G. Heilbronner, USA (USMA '45).

**HOUSER-STIVERS**—Married in the First Presbyterian Church, Baltimore, Md., 7 September 1945, Miss Nancy Stivers to Maj. Robert H. Houser, AUS.

**JENNINGS-BRUSEWITZ**—Married in the Army Base Chapel, Stout Field, Indianapolis, Ind., 5 September 1945, Capt. Geraldine Victoria Brusewitz, WAC, to Maj. JoIn Venderwerf Jennings, AAF.

**JOHNSON-AUSICH**—Married in St. Matthew's Cathedral, Washington, D. C., 15 September 1945, Miss Amalya Ausich to Lt. Milton L. Johnson, USNR.

**JOHNSON-MANN**—Married in Coleman Place Presbyterian Church, Norfolk, Va., 9 September 1945, Miss June Ray Mann to Lt. Elmo K. Johnson, SC.

**JOHNSON-THORN**—Married in the chapel, Naval Operating Base, Norfolk, Va., 8 September 1945, Miss Mary Elizabeth Thorn to Lt. Richard Johnson, USNR.

**JONES-ZIMMERMAN**—Married in Madison Avenue Presbyterian Church, New York City, 15 September 1945, Miss Dorothy Jean Zimmerman to Lt. Rudolph Wagner Jones, Jr., MC, AUS.

**KLEY-CANNON**—Married in South Chapel, Lincoln (Neb.) Air Base, 1 Sept. 1945, Miss Florence Elizabeth Cannon to Capt. John A. Kley, AAF.

**KOCH-BELT**—Married in Corpus Christi Catholic Church, Baltimore, Md., 15 September 1945, Miss Marietta Dulany Belt to Lt. (jg) Robert Joseph Koch, USNR.

**LA ROSE-ZEAMER**—Married in Orange, N. J., 15 September 1945, Miss Isabel Zeamer to Lt. (jg) James Rene LaRose, USNR.

**LEE-BLANCH**—Married in Christ English Lutheran Church, Baltimore, Md., 11 August 1945, Miss Lillian Margaret Blanch to Lt. Jas. Julian Lee, USNR.

**LILLEY-VIERGUTZ**—Married in Christ Lutheran Church, Washington, D. C., 13 September 1945, Miss Nan Viergutz to Lt. Frank Walder Lilley, Jr., AUS.

**MACRAE-VON MEHREN**—Married in the Presbyterian Church, Westfield, N. J., 15 September 1945, Miss Vivi von Mehren to Capt. James Berry Macrae, AAF.

**MCOMAS-JACKSON**—Married at Naval Communications Annex Chapel, Washington, D. C., 10 September 1945, Lt. (jg) Margaret C. F. Jackson, USNR, to Lt. Robert Francis McComas, (ChC), USN.

**MITCHELL-FRISH**—Married in Christ Episcopal Church, Fairmont, W. Va., 14 September 1945, Miss Mary Elizabeth Frish to Lt. John Young S. Mitchell, III, AAF.

**MONTGOMERY-TORNEY**—Married in the Cathedral of the Incarnation, Garden City, Long Island, N. Y., 15 September 1945, Miss (Please turn to Next Page)



**Births, Marriages, Deaths**  
*(Continued from Preceding Page)*

**Jacqueline Stuart Torney**, daughter of the late Lt. Stuart W. Torney, AAF, to Lt. Geo. Paul Montgomery, AAF.

**MURPHY-FRIES**—Married in the Church of the Holy Innocents, New York City, 12 September 1945, Miss Jeanne Cecile Fries to 1st Lt. Robert F. Murphy, AUS.

**NOLAN-POSEY**—Married in the home of her mother at La Plata, Md., 15 September 1945, Miss Katherine H. Posey to Lt. Charles Howard Nolan, Jr., USA.

**ORTH-LOVE**—Married in the First Presbyterian Church, Burlington, N. C., 18 Sept. 1945, Miss Mary Elizabeth Love to Lt. Charles Daniel Orth, 3d, AUS.

**PAGE-MACCHESNEY**—Married in the Church of the Transfiguration, New York City, 15 September 1945, Miss Fae MacChesney of Troy, N. Y., to Lt. Walter H. Page, USNR, of Marblehead, Mass.

**PAUL-STRAWN**—Married recently at the home of Col. and Mrs. Christopher Strawn, USA, Mrs. Martha Strawn Ambeg to Mr. Charles B. Paul of El Paso, Tex.

**PRATT-DEVEREUX**—Married in Roman Catholic Church of St. Vincent Ferrer, New York City, 15 September 1945, Miss Sheila Mary Devereux, daughter of Maj. Leslie Warwick Devereux, AUS, to Lt. Peter Egan Pratt, AUS.

**PRUETT-ULM**—Married in the First Methodist Church, Hamilton, Ohio, 25 August 1945, Lt. Erna Jeanette Ulm, ANC, to Cpl. Irwin Long Pruett, AUS.

**RODGERS-WEIDMAN**—Married in Brooklyn, N. Y., 9 September 1945, Miss Phyllis Weidman to Ens. James Louis Rodgers, Jr., USNR.

**RUSH-SMITH**—Married in the Church of the Redeemer, Bryn Mawr, Pa., 15 September 1945, Miss Carol MacD. Smith to Maj. Alexander Rush, MC, AUS.

**SAYLOR-ADAMS**—Married in Christ Episcopal Church, Glen Ridge, N. J., 15 September 1945, Miss Jane E. Adams to 1st Lt. John E. Saylor, AAF.

**SHATTUCK-KELLY**—Married in St. Augustine's Church, Larchmont, N. Y., 17 September 1945, Miss Frances Kennedy Kelly to Capt. Frank Garrett Shattuck, AAF, recently returned from duty overseas.

**SMITH-KERNS**—Married in Danville, Va., 1 September 1945, Miss Julia Virginia Kerns to Capt. William Andrew Smith, Jr., AAF.

**SMITH-STRONG**—Married in St. Albans Episcopal Church, Washington, D. C., 18 Sept. 1945, Miss Catherine Birney Strong to Lt. Lyman H. Smith, Jr., of Naples, N. Y.

**STROOP-KING**—Married in the Presbyterian Church, Noroton, Conn., 15 September 1945, Miss Margaret Hazen King to Capt. Donald James Stroop, AUS.

**SYKES-LEVY**—Married in St. Albans Episcopal Church, Washington, D. C., 14 September 1945, Miss Virginia Louise Levy to Capt. John Paul Sykes, AUS.

**TAYLOR-HUTCHINS**—Married in the Church of Christ, Hanover, N. H., 15 Sept. 1945, Miss Marjorie Marian Hutchins, daughter of Col. and Mrs. Carroll Ray Hutchins, USA, to Lt. Warren Justin Taylor, MC, AUS.

**TODD-WATTS**—Married in the chapel at Fort McPherson, Ga., 2 September 1945, Miss

Barbara Jenn Watts to Lt. William Neely Todd, 3d, USA (USMA '44), son of Col. and Mrs. Todd, USA, of the Army War College, Washington, D. C.

**TRUAX-NEIMEYER**—Married in La Jolla, Calif., 8 September 1945, Miss Lucrece B. Neimeyer to Capt. Franklin Edward Truax, AUS.

**VANDERSTEELE-STODDARD**—Married in Trinity Church, Hewlett, Long Island, N. Y., 15 September 1945, Miss Betsy Rogers Stoddard to 1st Lt. William Vandersteel, AAF.

**WELD-EATON**—Married in St. Michael's Episcopal Church, Milton, Mass., 19 Sept. 1945, Miss Elizabeth Stevens Eaton to Capt. Stephen Minot Weld, AUS.

**WEST-HOOKER**—Married in Luke, Md., 15 September 1945, Lt. (jg) Anna Margaret Hooker, USNR, to Lt. Horace B. West, USNR, son of Comdr. and Mrs. Marcus Eugene West, (SC) USN-Ret.

**WHEAT-HAWLEY**—Married in Kassel, Germany, 22 July 1945, 1st Lt. Margaret C. Hawley to Capt. Parker Wheat.

**WIGG-NEWELL**—Married in Central Presbyterian Church, Montclair, N. J., 15 September 1945, Miss Natalie Virginia Newell to Capt. James E. Wigg, AAF.

**WILKIN-NICHOLS**—Married in St. Thomas Episcopal Church, New York, N. Y., 15 September 1945, Dr. Virginia Center Nichols, Asst. Resident Physician at Babies Hospital, New York, to Lt. Leo F. J. Wilkin, Jr., MC, AUS.

**WINN-LONG**—Married in the Church of St. Stephen and the Incarnation, Washington, D. C., 14 September 1945, Miss Nancy-Kay Long to Capt. Francis Warren Winn, AUS.

**Died**

**AMES**—Died in a Japanese prison camp at Kyushu, 31 Jan. 1945, Capt. Godfrey Roland Ames, USA (USMA '37). Survived by his widow, Mrs. Kay Gasper Ames, his son Roland and daughter Karol, all residing at 143 Beach 8th St., Rockaway Beach, N. Y.

**BENDIX**—Declared officially dead, having been listed as missing since 10 Jan. 1944, Lt. Albert H. Bendix, AAF. Survived by his parents, Mr. and Mrs. Harry Bendix, of 140 Riverside Drive, New York, N. Y.

**BROGAN**—Died at Westwood, N. J., 19 Sept. 1945, Maj. Thomas G. Brogan, AUS, of Camp Shanks, N. J. Surviving are his widow, Mrs. Jane Breitinger Brogan of Atlantic City, N. J., and three brothers.

**CLARK**—Died at Ft. Oglethorpe, Ga., 18 Sept. 1945, Col. Howard Clark, USA. Survived by his son, Lt. Col. Howard W. Clark, USA and his widow, Mrs. Able Clark.

**DUFF**—Killed in airplane crash near Port Arthur, Tex., 18 Sept. 1945, Capt. Robert Louis Duff, USMCR. Survived by his widow, Mrs. Betty Jeanne Duff of San Francisco, Calif., and his father, Mr. Louis L. Duff of Des Moines, Iowa.

**GANG**—Died aboard a US Aircraft Carrier in the Pacific, 3 Sept. 1945, Lt. Comdr. Victor Gang, (MC) USNR. Surviving are his widow, Mrs. Phyllis Gang, of 955 Fifth Avenue, New York, N. Y., his mother, Mrs. Yetta Gang, and three sisters.

**GREENE**—Died at Langley Field, Va., 13 Sept. 1945, Col. Carl F. Greene, USA. Interment was in Arlington National Cemetery 18 Sept.

**HAMILTON**—Died of acute bronchitis in a Japanese Prisoner of War Camp near Fukuoka 3 Feb. 1945, Lt. Donald W. Hamilton, Jr., USN, (USMA '38), son of the late Lieutenant Commander Hamilton, USN, and Mrs. Hamilton; husband of the former Marie O'Hara;

and nephew of Vice Adm. Aubrey W. Fitch, USN, Superintendent United States Naval Academy, and Mrs. Fitch.

**JOHNSON**—Died at Middlesex Hospital, New Brunswick, N. J., 13 Sept. 1945, Mrs. Clara Spafford Johnson, mother of Lt. Col. William S. Johnson, now at New Delhi, India.

**KENDALL**—Died at station hospital, Buckley Field, Denver, Colo., 7 Sept. 1945, 1st Lt. Vaughan Kendall, AAF. Survived by his widow, Mrs. Nancy S. Pyle Kendall, of 194 East End Avenue, New York City; by his parents, Mr. and Mrs. Leslie Kendall, of Montpelier, Vt., and a brother.

**LAWEES**—Died at the home of her son at Aberdeen Proving Ground, Aberdeen Md., 12 Sept. 1945, Mrs. George H. Lawes, mother of Brig. Gen. H. J. Lawes, USA.

**LEWIS**—Died in Fukuoka Prisoner of War Camp, 31 Jan. 1945, after 2 years and 9 months imprisonment in the Philippine Islands, Lt. Col. Eugene Thomas Lewis, USA (USMA '28). Survived by his widow, M. S. Elizabeth Thompson Lewis and two sons, Eugene Thomas and Robert Leviton of 217 Burr Road, San Antonio, Tex., and by his parents, Mr. and Mrs. Ed Lewis of Jackson, Miss.

**MATHES**—Killed in action while serving on a PT boat in the English Channel, 9 Aug. 1945, Lt. (jg) James Monroe Mathes, Jr., USNR. Survived by his wife, Mrs. Mary Chapman Mathes, his parents, Mr. and Mrs. James M. Mathes, of Greenwich, Conn., and York Harbor, Me., and by three sisters.

**PARKE**—Killed in action aboard the USS Indianapolis 30 July 1945, Capt. Edward LeRoy Parke, USMC, son of Mrs. Betty B. Gorse, wife of Lt. Col. J. H. Gorse, AAF.

**PRICE**—Died at his home in Richmond, Va., 17 Sept. 1945, Brig. Gen. Harrison J. Price, USA-Ret. Services in Fort Myer Chapel and interment in Arlington National Cemetery. Survived by a son, Lt. Comdr. Hardin B. Price, USNR, two daughters, Mrs. Philip S. Jessup, of Washington, D. C., and Mrs. Walter F. Sutter, of Boston, Mass. Also surviving are two sisters.

**REICHMANN**—Died in Minneapolis, Minn., 17 Sept. 1945, Mrs. Anne Van Derlip Reichmann, widow of Col. Carl Reichmann, USA. Survived by two daughters, Mrs. Frank H. MacDougall of Minneapolis and Mrs. Livingston Watous of Washington, D. C., by three grand children and two great grand children. Funeral services in Minneapolis and interment in Arlington National Cemetery.

**SCHOCLEY**—Died at her home in Washington, D. C., 17 Sept. 1945, Mrs. Lizzie L. Schooley, mother of Lt. Col. William E. Schooley, on duty in the office of the Army Fiscal Director, War Department, Washington, D. C.

**VESEY**—Executed in Japanese prison camp at Dausalan, Mindano, 3 July 1942, in retaliation for the escape of American prisoners, Lt. Col. Robert H. Vesey, USA (USMA '20). Surviving are his widow, Mrs. Effie B. Vesey, 822½ South Seranno Avenue, Los Angeles, Calif., and by two daughters, Mrs. Jeannette West, wife of Comdr. Kenneth West, 87 Bowyer Road, USNA, Annapolis, Md., and Mrs. Betty Gwald, wife of Lt. H. W. Gwald, USMS, of 822½ S. Serrano St., Los Angeles, Calif.

**WAGNER**—Killed in airplane crash near Port Arthur, Tex., 18 Sept. 1945, Lt. William J. Wagner, (MC) USN. Survived by his mother, Mrs. Anna Wagner of New York, N. Y.

**WALLACE**—Died at his home in Chillicothe, Ga., 12 Sept. 1945, Col. William Wallace, USA-Ret. Survived by a son, Lt. Comdr. Henry K. Wallace, USNR, on duty in the Pacific, a daughter, Mrs. Austin P. Story, of Chillicothe, and three grandchildren.

**Obituaries**

Col. William Wallace, USA-Ret., died 5 Sept. at his residence, 198 Caldwell Street, Chillicothe, Ohio, of pneumonia.

A native of Indianapolis, where he was born 31 Aug. 1866, the son of William and Cordelia Butler Wallace, he entered the U. S. Army as a second lieutenant on 12 Oct. 1891.

He saw service in the Spanish-American war and in the Philippine Islands. During World War I he was sent to Camp Sherman and went overseas in command of the 332nd Infantry, serving in France and Italy.

During the Spanish-American War he was awarded the Silver Star for gallantry in action against Spanish forces at El Caney, Cuba, on 1 July, 1898, and in World War I was awarded the Distinguished Service Order by Great Britain and the Order of St. Maurice and St. Lazarus by the Italian government for services rendered in the Italian campaign during October and November, 1918.

In 1893 he married Bessie Keller, who died in 1938. He was a nephew of Gen. Lew Wallace, author of "Ben Hur." His paternal grandfather attended the first class at West Point.

Surviving Col. Wallace are a son, Lt. Comdr. Henry K. Wallace, serving in the Pacific with the Navy, and a daughter, Mrs. Austin P. Story of Chillicothe; also three grandchildren, Joan Wallace, Austin P.

Story, Jr., and William Wallace Story.

Col. Thales Lucius Ames, USA-Ret., died in Cambridge, Mass., 11 Sept. 1945, after a long illness.

Colonel Ames was born in Dunn County, Wis., in 1869. He was appointed to the Military Academy, at West Point in June 1891. He stood No. 9 in his class and was chosen First Captain of the Corps in his First Class Year. He was graduated from the Military Academy in 1895 and was appointed Second Lieutenant in the Field Artillery. In 1898 he passed the examination for the Ordnance Department and served in that Department through all the grades from First Lieutenant to Colonel. He saw service in two wars, the Spanish War and the First World War and offered his services in World War II but regulations were not to call back into service any officer over seventy years of age.

Colonel Ames was Center on the West Point Football team and for two years was Walter Camp's All American Center.

Colonel Ames saw three years' service in the Philippines and mounted some of the guns on Corregidor. He was an active worker in the Episcopal Cathedral in Manila and was a close friend of Bishop Brent throughout his service in the Philippines. On their way home Colonel and Mrs. Ames visited China, Japan, India, Egypt and many of the countries in Europe. Colonel Ames was stationed in Washington from 1912 to 1920.

Burial services were held at the Fort Myer Chapel at 2:00 P. M., Friday.

The pall bearers were his classmates, Brig. Generals Frank B. Watson and Louis M. Nuttman; Colonels August C. Nissen and Harry La T. Cavenaugh, all residents of Washington.

He is survived by his widow, Margaretta Kelton and by his four sisters, Margaret Seeger, Sadie J. Ames, Mrs. Walter Raas, and Ada Ames. Mrs. Ames is the sister of Miss Adelaide Kelton and Mrs. Harvey W. Wiley, all daughters of the late Adjutant General John C. Kelton, class of 1851. The only daughter of Colonel and Mrs. Ames, Adelaide, an astronomer at Harvard Observatory, well known for her work with the External Galaxies, was drowned in 1932.

Maj. Horace Greeley, attached to the Far Eastern Air Force Headquarters in Manila at the time of the fall of Bataan, died 31 Jan., aboard a vessel shortly after leaving Formosa. He was 30 years old.

A graduate of the United States Military Academy in the class of '37, Maj. Greeley entered Randolph Field for flight training and graduated from Kelly Field in 1938.

In 1941 Maj. Greeley was sent to Chungking, China, as Assistant Military Attaché for Air. He returned to the Philippines in the late fall of 1941 and was assigned to the Far Eastern Air Force. Before the surrender of Bataan he was awarded the Silver Star for gallantry in action.

Maj. Greeley was the son of the late Col. M. N. Greeley. He is survived by his mother, Mrs. Elizabeth Greeley of Jackson Heights, Long Island; a sister, Miss Elizabeth Greeley, and four brothers, Godfrey Greeley of Nashville, Tenn.; Col. Leonard Greeley, Col. Brendan Greeley, and Comdr. Quentin Greeley.

**Gen. Surles Awarded D.S.M.**

Maj. Gen. Alexander D. Surles, director of the War Department, Bureau of Public Relations, was presented with the Distinguished Service Medal by the Secretary of War 17 Sept.

The award was made to General Surles for services as Director of the Bureau of Public Relations from August, 1941, to September, 1945. The accompanying citation declared "he was responsible for keeping the Nation informed of the progress of war operations and of changes in plans and policies affecting individual citizens."

At the same ceremony the Legion of Merit was awarded to Col. William H. Kyle, aide-de-camp to the Secretary of War, and to Col. Kenneth R. Kreps, pilot and special travel assistant to the Secretary of War.

**U. S. Minefields**

The Navy Department this week announced that more than 10,000 moored contact mines, laid in 1942-43 to prevent enemy penetration of important anchorages, convoy assembly points and refuge areas in U. S. coastal waters, Trinidad and Alaska, have now been removed.

The Department said that the defensive minefields completely fulfilled their objective in that no enemy craft is known to have penetrated them and no Allied vessel was attacked while in the sheltered areas. Defended areas, the Navy said, were Chesapeake Bay, Cape Hatteras, Key West, Trinidad, Kodiak in Alaska, and Adak in the Aleutian Islands. Other United States coastal waters were defended with Army-controlled mines.

**For  
your  
convenience--**

**ARMY AND NAVY JOURNAL, INC.**  
 1711 Connecticut Avenue Northwest  
 Washington 9, D. C.

Please enter my subscription\* to the ARMY AND NAVY JOURNAL for one year. I enclose payment herewith

Name and rank .....

Address .....

\*If you are already a subscriber and wish to renew your subscription, check here ☐. Make check or money orders payable to Army and Navy Journal, Inc. Subscription rates, \$7.00 a year to civilians and organizations; \$5.00 to individual members of the Services.

**Falvey Granite Company, Inc.**

Monuments for Arlington and other National Cemeteries. Latest equipment for carving lettering in cemetery, by hand or Sand Blast. Designs & Price List on request.  
 209 Upshur St., N. W., Wash., D. C.  
 Phone TAYLOR 1100



ory.  
SA-Ref.,  
pt. 1945,  
County,  
the Milli-  
1891.  
as chosen  
First Class  
Military  
and Second  
in 1898 Le  
ance De-  
partment  
lieutenant  
wars, the  
War and  
II but  
into serv-  
age.  
est Post  
s Walter  
service in  
e of the  
e worker  
illa and  
through-  
On their  
s visited  
ay of the  
was sta-  
1920.  
ort Myer  
es, Brig.  
ouis M.  
sen and  
ents of  
argaretta  
Margaret  
Raas,  
sister of  
rvey W.  
Adjutant  
851. The  
s. Ames,  
Observa-  
the Ex-  
32.  
to the  
sters in  
Bataan,  
ly after  
s old,  
Military  
eyley end  
ing and  
Chung-  
Attache  
lines in  
to the  
tenderer  
e Star  
ate Col.  
mother,  
Leights,  
Greider,  
of Nash-  
1, Bren-  
veley.  
M.  
direc-  
eau of  
ith the  
e Sec-  
Surles  
ean of  
1941, to  
ing el-  
le of  
the  
anges  
vidual  
ion of  
um II  
ary of  
pilot  
Secre-  
ek an-  
moored  
prevent  
anch-  
refuge  
inid ad  
ed.  
ensive  
ir ob-  
known  
Allied  
tered  
said.  
terras.  
Alaska.  
Other  
were  
es.

## Development of Atomic Bomb (Continued from Page 144)

hope of finding a test that would give an earlier warning of impending injury.

**Instruments for Radiation Measurements**  
8.67. The Health Division had principal responsibility for the development of pocket meters for indicating the extent of exposure of persons. The first of these instruments was a simple electroscop about the size and shape of a fountain pen. Such instruments were electrostatically charged at the start of each day and were read at the end of the day. The degree to which they became discharged indicated the total amount of ionizing radiation to which they had been exposed. Unfortunately they were none too rugged and reliable, but the error of reading was nearly always in the right direction—i.e., in the direction of overstating the exposure. At an early date the practice was established of issuing two of these pocket meters to everyone entering a dangerous area. A record was kept of the readings at the time of issuance and also when the meters were turned in. The meters themselves were continually although gradually improved. The Health Division later introduced "film badges," small pieces of film worn in the identification badge, the films being periodically developed and examined for radiation blackening.

8.68. The Health Division cooperated with the Physics Division in the development and use of various other instruments. There was "Sneezy" for measuring the concentration of radioactive dust in the air and "Pluto" for measuring -emitting contamination (usually plutonium) of laboratory desks and equipment. Counters were used to check the contamination of laboratory coats before and after the coats were laundered. At the exit gates of certain laboratories concealed counters sounded an alarm when someone passed whose clothing, skin or hair was contaminated. In addition, routine inspections of laboratory areas were made.

8.69. One of the studies made involved meteorology. It became essential to know whether the stack gases (at Clinton and at Hanford) would be likely to spread radioactive fission products in dangerous concentrations. Since the behavior of these gases is very dependent on the weather, studies were made at both sites over a period of many months, and satisfactory stack operation was specified.

### Research

8.70. Since both the scale and the variety of the radiation hazards in this enterprise were unprecedented, all reasonable precautions were taken; but no sure means were at hand for determining the adequacy of the precautions. It was essential to supplement previous knowledge as completely as possible. For this purpose, an extensive program of animal experimentation was carried out along three main lines: (1) exposure to neutron, alpha, beta and gamma radiation; (2) ingestion of uranium, plutonium and fission products; (3) inhalation of uranium, plutonium and fission products. Under the general direction of Dr. Stone these experiments were carried out at Chicago, Clinton and the University of California principally by Dr. Cole and Dr. Hamilton. Extensive and valuable results were obtained.

### Summary

8.71. Both space and security restrictions prevent a detailed report on the work of the laboratories and plants concerned with plutonium production.

8.72. Two types of neutron absorption are fundamental to the operation of the plant: one, neutron absorption in U-235 resulting in fission, maintains the chain reaction as a source of neutrons; the other, neutron absorption in U-238 leads to the formation of plutonium, the desired product.

8.73. The course of a nuclear chain reaction in a graphite-moderated heterogeneous pile can be described by following a single generation of neutrons. The original fast neutrons are slightly increased in number by fast fission, reduced by resonance absorption in U-238 and further reduced by absorption at thermal energies in graphite and other materials and by escape; the remaining neutrons, which have been slowed in the graphite, cause fission in U-235, producing a new generation of fast neutrons similar to the previous generation.

8.74. The product, plutonium, must be separated by chemical processes from a comparable quantity of fission products and a much larger quantity of uranium. Of several possible separation processes the one chosen consists of a series of reactions including precipitating with carriers, dissolving, oxidizing and reducing.

8.75. The chain reaction was studied at low power at the Argonne Laboratory beginning early in 1943. Both chain reaction and chemical separation processes were investigated at the Clinton Laboratories beginning in November 1943, and an appreciable amount of plutonium was produced there.

8.76. Construction of the main production plant at Hanford, Washington, was begun in 1943 and the first large pile went into operation in September 1944. The entire plant was in operation by the summer of 1945 with all chain-reacting piles and chemical separation plants performing better than had been anticipated.

8.77. Extensive studies were made on the

use of heavy water as a moderator and an experimental pile containing heavy water was built at the Argonne Laboratory. Plans for a production plant using heavy water were given up.

8.78. The Health Division was active along three main lines: (1) medical examination of personnel; (2) advice on radiation hazards and constant check on working conditions; (3) research on the effects of radiation.

## CHAPTER IX GENERAL DISCUSSION OF THE SEPARATION OF ISOTOPES Introductory Note

9.1. The possibility of producing an atomic bomb of U-235 was recognized before plutonium was discovered. Because it was appreciated at an early date that the separation of the uranium isotopes would be a direct and major step toward making such a bomb, methods of separating uranium isotopes have been under scrutiny for at least six years. Nor was attention confined to uranium since it was realized that the separation of deuterium was also of great importance. In the present chapter the general problems of isotope separation will be discussed; later chapters will take up the specific application of various processes.

**Factors Affecting the Separation of Isotopes**  
9.2. By definition, the isotopes of an element differ in mass but not in chemical properties. More precisely, although the nuclear masses and structures differ, the nuclear charges are identical and therefore the external electronic structures are practically identical. For most practical purposes, therefore, the isotopes of an element are separable only by processes depending on the nuclear mass.

9.3. It is well known that the molecules of a gas or liquid are in continual motion and that their average kinetic energy depends only on the temperature, not on the chemical properties of the molecules. Thus in a gas made up of a mixture of two isotopes the average kinetic energy of the light molecules and of the heavy ones is the same. Since the kinetic energy of a molecule is  $\frac{1}{2}mv^2$ , where  $m$  is the mass and  $v$  the speed of the molecule, it is apparent that on the average the speed of a lighter molecule must be greater than that of a heavier molecule. Therefore, at least in principle, any process depending on the average speed of molecules can be used to separate isotopes. Unfortunately, the average speed is inversely proportional to the square root of the mass so that the difference is very small for the gaseous compounds of the uranium isotopes. Also, although the average speeds differ, the ranges of speed show considerable overlap. In the case of the gas uranium hexafluoride, for example, over 40 percent of the light molecules have speeds as low as those of 50 percent of the heavy molecules.

9.4. Obviously there is no feasible way of applying mechanical forces directly to molecules individually; they cannot be poked with a stick or pulled with a string. But they are subject to gravitational fields and, if ionized, may be affected by electric and magnetic fields. Gravitational forces are, of course, proportional to the mass. In a very high vacuum U-235 atoms and U-238 atoms would fall with the same acceleration, but just as a feather and a stone fall at very different rates in air where there are frictional forces resisting motion, there may be conditions under which a combination of gravitational and opposing intermolecular forces will tend to move heavy atoms differently from light ones. Electric and magnetic fields are more easily controlled than gravitational fields or "pseudo-gravitational" fields (i.e., centrifugal-force fields) and are very effective in separating ions of differing masses.

9.5. Besides gravitational or electromagnetic forces, there are, of course, interatomic and intermolecular forces. These forces govern the interaction of molecules and thus affect the rates of chemical reactions, evaporation processes, etc. In general, such forces will depend on the outer electrons of the molecules and not on the nuclear masses. However, whenever the forces between separated atoms or molecules lead to the formation of new molecules, a mass effect (usually very small) does appear. In accordance with quantum-mechanical laws, the energy levels of the molecules are slightly altered, and differently for each isotope. Such effects do slightly alter the behavior of two isotopes in certain chemical reactions, as we shall see, although the difference in behavior is far smaller than the familiar differences of chemical behavior between one element and another.

9.6. These, then, are the principal factors that may have to be considered in devising a separation process: equality of average thermal kinetic energy of molecules at a given temperature, gravitational or centrifugal effects proportional to the molecular masses, electric or magnetic forces affecting ionized molecules, and interatomic or intermolecular forces. In some isotope-separation processes only one of these effects is involved and the overall rate of separation can be predicted. In other isotope-separation processes a number of these effects occur simultaneously so that prediction becomes difficult.

### Criteria for Appraising a Separation Process

9.7. Before discussing particular processes

suitable for isotope separation, we should know what is wanted. The major criteria to be used in judging an isotope-separation process are as follows:

### Separation Factor

9.8. The separation factor, sometimes known as the enrichment or fractionating factor of a process, is the ratio of the relative concentration of the desired isotope after processing to its relative concentration before processing. Defined more precisely: If, before the processing, the numbers of atoms of the isotopes of mass number  $m_1$  and  $m_2$  are  $n_1$  and  $n_2$  respectively, (per gram of the isotope mixture) and if, after the processing, the corresponding numbers are  $n_1'$  and  $n_2'$  then the separation factor is:

$$r = \frac{n_1/n_2}{n_1'/n_2'}$$

This definition may be applied to one stage of a separation plant or to an entire plant consisting of many stages. We are usually interested either in the "single stage" separation factor or in the "overall" separation factor of the whole process. If  $r$  is only slightly greater than unity, as is often the case for a single stage, the number  $r-1$  is sometimes more useful than  $r$ . The quantity  $r-1$  is called the enrichment factor. In natural uranium  $m_1=235$ ,  $m_2=238$ , and  $n_1/n_2=1/140$  approximately, but in 90 percent U-235,  $n_1/n_2=9/1$ . Consequently in a process producing 90 percent U-235 from natural uranium the overall value of  $r$  must be about 1260.

### Yield

9.9. In nearly every process a high separation factor means a low yield, a fact that calls for continual compromise. Unless indication is given to the contrary, we shall state yields in terms of U-235. Thus a separation device with a separation factor of 2 ( $n_1/n_2=1/70$ ) and a yield of one gram a day is one that, starting from natural uranium, produces, in one day, material consisting of 1 gram of U-235 mixed with 70 grams of U-238.

### Hold-up

9.10. The total amount of material tied up in a separation plant is called the "hold-up." The hold-up may be very large in a plant consisting of many stages.

### Start-up Time

9.11. In a separation plant having large hold-up, a long time—perhaps weeks or months—is needed for steady operating conditions to be attained. In estimating time schedules this "start-up" or "equilibrium" time must be added to the time of construction of the plant.

### Efficiency

9.12. If a certain quantity of raw material is fed into a separation plant, some of the material will be enriched, some impoverished, some unchanged. Parts of each of these three fractions will be lost and parts recovered. The importance of highly efficient recovery of the enriched material is obvious. In certain processes the amount of unchanged material is negligible, but in others, notably in the electromagnetic method to be described below, it is the largest fraction and consequently the efficiency with which it can be recovered for recycling is very important. The importance of recovery of impoverished material varies widely, depending very much on the degree of impoverishment. Thus in general there are many different efficiencies to be considered.

### Cost

9.13. As in all parts of the uranium project, cost in time was more important than cost in money. Consequently a number of large-scale separation plants for U-235 and deuterium were built at costs greater than would have been required if construction could have been delayed for several months or years until more ideal processes were worked out.

### SOME SEPARATION PROCESSES

#### Gaseous Diffusion

9.14. As long ago as 1896 Lord Rayleigh showed that a mixture of two gases of different atomic weight could be partly separated by allowing some of it to diffuse through a porous barrier into an evacuated space. Because of their higher average speed the molecules of the light gas diffuse through the barrier faster so that the gas which has passed through the barrier (i.e., the "diffusate") is enriched in the lighter constituent and the residual gas (which has not passed through the barrier) is impoverished in the lighter constituent. The gas most highly enriched in the lighter constituent is the so-called "instantaneous diffusate"; it is the part that diffuses before the impoverishment of the residue has become appreciable. If the diffusion process is continued until nearly all the gas has passed through the barrier, the average enrichment of the diffusate naturally diminishes. In the next chapter we shall consider these phenomena in some detail. Here we shall merely point out that, on the assumption that the diffusion rates are inversely proportional to the square roots of the molecular weights the separation factor for the instantaneous diffusate, called the "ideal separation factor"  $\alpha$ , is given by

$$\alpha = \sqrt{\frac{M_2}{M_1}}$$

where  $M_1$  is the molecular weight of the lighter gas and  $M_2$  that of the heavier. Applying this formula to the case of uranium will

illustrate the magnitude of the separation problem. Since uranium itself is not a gas, some gaseous compound of uranium must be used. The only one obviously suitable is uranium hexafluoride,  $UF_6$ , which has a vapor pressure of one atmosphere at a temperature of  $56^\circ C$ . Since fluorine has only one isotope, the two important uranium hexafluorides are  $U^{235}F_6$  and  $U^{238}F_6$ ; their molecular weights are 349 and 352. Thus, if a small fraction of a quantity of uranium hexafluoride is allowed to diffuse through a porous barrier, the diffusate will be enriched in  $U^{235}F_6$  by a factor

$$\alpha = \sqrt{\frac{352}{349}} = 1.0043$$

which is a long way from the 1260 required (see paragraph 9.8.).

9.15. Such calculations might make it seem hopeless to separate isotopes (except, perhaps, the isotopes of hydrogen) by diffusion processes. Actually, however, such methods may be used successfully—even for uranium. It was the gaseous diffusion method that F. W. Aston used in the first partial separation of isotopes (actually the isotopes of neon). Later G. Hertz and others, by operating multiple-stage recycling diffusion units, were able to get practically complete separation of the neon isotopes. Since the multiple-stage recycling system is necessary for nearly all separation methods, it will be described in some detail immediately following introductory remarks on the various methods to which it is pertinent.

### Fractional Distillation

9.16. The separation of compounds of different boiling points, i.e., different vapor pressures, by distillation is a familiar industrial process. The separation of alcohol and water (between which the difference in boiling point is in the neighborhood of  $20^\circ C$ .) is commonly carried out in a simple still using but a single evaporator and condenser. The condensed material (condensate) may be collected and redistilled a number of times if necessary. For the separation of compounds of very nearly the same boiling point it would be too laborious to carry out the necessary number of successive evaporations and condensations as separate operations. Instead, a continuous separation is carried out in a fractionating tower. Essentially the purpose of a fractionating tower is to produce an upward-directed stream of vapor and a downward-directed stream of liquid, the two streams being in intimate contact and constantly exchanging molecules. The molecules of the fraction having the lower boiling point have a relatively greater tendency to get into the vapor stream and vice versa. Such counter-current distillation methods can be applied to the separation of light and heavy water, which differ in boiling point by  $1.4^\circ C$ .

### General Application of Countercurrent Flow

9.17. The method of countercurrent flow is useful not only in two-phase (liquid-gas) distillation processes, but also in other separation processes such as those involving diffusion resulting from temperature variations (gradients) within one-phase systems or from centrifugal forces. The countercurrents may be with respect to two gases, two liquids, or one gas and one liquid.

### The Centrifuge

9.18. We have pointed out that gravitational separation of two isotopes might occur since the gravitational forces tending to move the molecules downward are proportional to the molecular weights, and the intermolecular forces tending to resist the downward motion depend on the electronic configuration, not on the molecular weights. Since the centrifuge is essentially a method of applying pseudogravitational forces of large magnitude, it was early considered as a method for separating isotopes. However, the first experiments with centrifuges failed. Later development of the high-speed centrifuge by J. W. Beams and others led to success. H. C. Urey suggested the use of tall cylindrical centrifuges with countercurrent flow; such centrifuges have been developed successfully.

9.19. In such a countercurrent centrifuge there is a downward flow of vapor in the outer part of the rotating cylinder and an upward flow of vapor in the central or axial region. Across the interface region between the two currents there is a constant diffusion of both types of molecules from one current to the other, but the radial force field of the centrifuge acts more strongly on the heavy molecules than on the light ones so that the concentration of heavy ones increases in the peripheral region and decreases in the axial region, and vice versa for the lighter molecules.

9.20. The great appeal of the centrifuge in the separation of heavy isotopes like uranium is that the separation factor depends on the difference between the masses of the two isotopes, not on the square root of the ratio of the masses as in diffusion methods.

### Thermal Diffusion Method

9.21. The kinetic theory of gases predicts the extent of the differences in the rates of diffusion of gases of different molecular weights. The possibility of accomplishing practical separation of isotopes by thermal diffusion was (Please Turn to Next Page)



Development of Atomic Bomb  
(Continued from Preceding Page)

first suggested by theoretical studies of the details of molecular collisions and of the forces between molecules. Such studies made by Enskog and by Chapman before 1920 suggested that if there were a temperature gradient in a mixed gas there would be a tendency for one type of molecule to concentrate in the cold region and the other in the hot region. This tendency depends not only on the molecular weights but also on the forces between the molecules. If the gas is a mixture of two isotopes, the heavier isotope may accumulate at the hot region or the cold region or not at all, depending on the nature of the intermolecular forces. In fact, the direction of separation may reverse as the temperature or relative concentration is changed.

9.22. Such thermal diffusion effects were first used to separate isotopes by H. Clusius and G. Dickel in Germany in 1938. They built a vertical tube containing a heated wire stretched along the axis of the tube and producing a temperature difference of about 600°C. between the axis and the periphery. The effect was twofold. In the first place, the heavy isotopes (in the substances they studied) became concentrated near the cool outer wall, and in the second place, the cool gas on the outside tended to sink while the hot gas at the axis tended to rise. Thus thermal convection set up a countercurrent flow, and thermal diffusion caused the preferential flow of the heavy molecules outward across the interface between the two currents.

9.23. The theory of thermal diffusion in gases is intricate enough; that of thermal diffusion in liquids is particularly complicated. A separation effect does exist, however, and has been used successfully to separate the light and heavy uranium hexafluorides.

## Chemical Exchange Method

9.24. In the introduction to this chapter we pointed out that there was some reason to hope that isotope separation might be accomplished by ordinary chemical reactions. It has in fact been found that in simple exchange reactions between compounds of two different isotopes the so-called equilibrium constant is not exactly one, and thus that in reactions of this type separation can occur. For example, in the catalytic exchange of hydrogen atoms between hydrogen gas and water, the water contains between three and four times as great a concentration of deuterium as the hydrogen gas in equilibrium with it. With hydrogen and water vapor the effect is of the same general type but equilibrium is more rapidly established. It is possible to adapt this method to a continuous countercurrent flow arrangement like that used in distillation, and such arrangements are actually in use for production of heavy water. The general method is well understood, and the separation effects are known to decrease in general with increasing molecular weight, so that there is but a small chance of applying it successfully to heavy isotopes like uranium.

## Electrolysis Method

9.25. The electrolysis method of separating isotopes resulted from the discovery that the water contained in electrolytic cells used in the regular commercial production of hydrogen and oxygen has an increased concentration of heavy water molecules. A full explanation of the effect has not yet been worked out. Before the war practically the entire production of heavy hydrogen was by the electrolysis method. By far the greatest production was in Norway, but enough for many experimental purposes had been made in the United States.

## Statistical Methods in General

9.26. The six methods of isotope separation we have described so far (diffusion, distillation, centrifugation, thermal diffusion, exchange reactions, and electrolysis) have all been tried with some degree of success on either uranium or hydrogen or both. Each of these methods depends on small differences in the average behavior of the molecules of different isotopes. Because an average is by definition a statistical matter, all such methods depending basically on average behavior are called statistical methods.

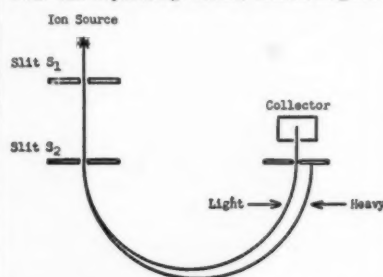
9.27. The criteria set up for judging separation processes are rather similar for the six statistical methods. In every case the separation factor is small so that many successive stages of separation are required. In most cases relatively large quantities of material can be handled in plants of moderate size. The hold-up and starting-time values vary considerably but are usually high. The similarity of the six methods renders it inadvisable to make final choice of method without first studying in detail the particular isotope, production rate, etc., wanted. Exchange reaction and electrolysis methods are probably unsuitable in the case of uranium, and no distillation scheme for uranium has survived. All of the other three methods have been developed with varying degrees of success for uranium, but are not used for hydrogen.

## The Electromagnetic Method and Its Limitations

9.28. The existence of non-radioactive isotopes was first demonstrated during the study of the behavior of ionized gas molecules moving through electric and magnetic fields. It is just such fields that form the basis of the so-called mass-spectrographic or electro-magnetic method of separating isotopes. This method is the best available for many types of isotope relative abundance determinations. The method is used constantly in checking the results of the uranium isotope separation methods we have already described. The reason the method is so valuable is that it can readily effect almost complete separation of the isotopes very rapidly and with small hold-up and short start-up time. If this is so, it may well be asked why any other method of separation is considered. The answer is that an ordinary mass spectrograph can handle only very minute quantities of material, usually of the order of fractions of a microgram per hour.

9.29. To understand the reasons for this quantitative (yield) limitation, we shall outline the principle of operation of a simple type of mass spectrograph first used by A. J. Dempster in 1918. Such an instrument is illustrated schematically in the following figure. The gaseous compound to be separated is introduced in the ion source, where some of its molecules are ionized in an electric discharge. Some of these ions go through the slit  $s_1$ . Between  $s_1$  and  $s_2$  they are accelerated by an electric field which gives them all practically the same kinetic energy, thousands of times greater than their average thermal energy. Since they now all have practically the same kinetic energy, the lighter ions must have less momenta than the heavy ones. Entering the magnetic field at the slit  $s_2$ , all the ions will move (perpendicular to the magnetic field) in semi-circular paths of radii proportional to their momenta. Therefore the light ions will move in smaller semicircles than the heavy, and with proper positioning of the collector, only the light ions will be collected.

9.30. Postponing detailed discussion of such a separation device, we may point out the principal considerations that limit the amount of material that passes through it. They are threefold: First, it is difficult to produce large quantities of gaseous ions. Second, a sharply limited ion beam is usually employed (as in the case shown) so that only a fraction of the ions produced are used. Third, too great densities of ions in a beam can cause space-charge effects which interfere with the separating action. Electromagnetic



methods developed before 1941 had very high separation factors but very low yields and efficiencies. These were the reasons which—before the summer of 1941—led the Uranium Committee to exclude such methods for large-scale separation of U-235. (See Chapter IV). Since that time it has been shown that the limitations are not insuperable. In fact, the first appreciable-sized samples of pure U-235 were produced by an electromagnetic separator, as will be described in a later chapter.

## CONTINUED NEXT WEEK

## Naval Security Warning

The Navy Department this week warned personnel being separated as a result of the demobilization program to maintain security information, even after discharge.

Personnel who have had access to any codes and ciphers, intelligence material, or classified equipment, the Department states, must realize that the status, technique, and procedures of such remain highly secret in peacetime, and that the disclosure of such information not only endangers the national security but also jeopardizes everything for which the war was fought.

The Department points out at the same time, that disclosure of such information makes the individual subject to trial under the provisions of the Espionage Act of 1917.

## Flight Training

Naval personnel transferred to general service upon separation from the flight training program prior to completion will be released from active duty under the provisions of ALNAV 252-45, the Navy Department said this week.

U. S. Merchant Marine  
(Continued from First Page)

importers and exporters as a whole or as between various classes of American shippers or as between various ports in the United States; (2) prevent competition which although not unfair in the legal sense, is excessive and destructive in character and consequently prejudicial to the interests of American water-borne commerce as a whole; and (3) in so far as Government aid is extended to assist in the development and maintenance of American shipping, that such aid should be used to obtain the objectives for which it is given and not improperly diverted.

The Commission also proposed that steamship lines be permitted to buy tonnage up to the equivalent of tonnage operated in a specific route or routes prior to 3 September, 1939. This would mean that if a line wishes to expand its operations it may do so only after approval by the Commission.

That a post war merchant marine be maintained in healthy competitive condition is imperative to the nation, not merely from the standpoint of expanding our foreign trade, but from the standpoint of maintaining a highly efficient auxiliary ready for almost instant use in time of emergency.

Plans are already underway for the laying up of a reserve fleet to be used for military purposes when and if necessary. It is not likely that Congress will abandon this plan. The deplorable condition that the United States Merchant Marine sunk to during the period between World War I and the present conflict not only permitted a great portion of American exports to travel in foreign bottoms, but found the United States in the position of having to construct hundreds of new vessels out of nothing at a time when war was upon us.

American shipbuilders met the problem and delivered the ships in one of the most gigantic construction efforts the world has ever seen. This effort, however, could have been directed in different channels had we had tonnage necessary and fast enough to follow the fleet to any part of the globe. As the situation existed we had but a handful of fast vessels capable of keeping up with our naval ships. The rest were obsolete ships, and most of these were not even fast enough to keep up with the increasing speed of other maritime nations in a commercial world.

## Island Surrenders

Following is a chronological history of the more important surrenders in the South Pacific, following the formal capitulation of the Japanese Government:

31 Aug.—Rear Admiral E. E. M. Whiting, USN, accepted the surrender of enemy forces on Marcus Island aboard the USS Bagley.

2 Sept.—Japan's last remaining military stronghold in the Marianas, Rota Island, surrendered unconditionally to representatives of Marine Major General Henry L. Larsen, island Commander of Guam.

3 Sept.—Japanese forces surrendered the Bonin Islands to Commo. John H. Magruder, Deputy Commander of the Marianas area.

3 Sept.—Vice Adm. G. D. Murray, USN, Commander Marianas accepted the surrender of all Japanese held islands under the command of Senior Japanese Imperial forces based at Truk Atoll, Caroline Islands.

3 Sept.—The Japanese held Islands of the Palau group in the western Carolines formally surrendered to Brig. Gen. F. O. Rogers, USMC.

4 Sept.—Lt. Col. Hideyuki Takeda, the highest ranking Japanese officer to be captured on Guam since the American occupation in August 1944, surrendered to representatives of Marine Major General Henry L. Larsen, island commander.

7 Sept.—Capt. H. B. Grow, USNR aboard the USS Baron in Wotje Lagoon accepted the surrender of Wotje Atoll the third Jap held Marshall Island.

11 Sept.—Ponape Atoll, Jap mandated Caroline Island was surrendered to Commo. Ben Wyatt, USN, acting for Rear Adm. W. K. Harrill, Commander Marshalls-Gilberts area.

## Canadian Officials Visit

Canadian Officials interested in mapping, charting and photogrammetry, and who are now engaged in a tour of various agencies in the United States, visited the Hydrographic Office, Monday morning, 17 Sept. 1945, for an inspection of the plant and facilities.

The party was welcomed by Rear Admiral G. S. Bryan, USN-Ret., Hydrographer and Capt. W. F. Jacobs, USN, Assistant Hydrographer.

Gen. Marshall's Talk  
(Continued from First Page)

assured the legislators that there has been no relation whatever between the rate of demobilization and any War Department plans for a post-war Army. Any such post-war plan, he said, can wait until the middle of next year.

The Chief of Staff reported that both General of the Army Dwight P. Eisenhower, commander in the European theater, and General of the Army Douglas MacArthur had vigorously protested when the initial 85-point discharge score was reduced to 80 points. The theater commanders, he said, contended that key leadership personnel, such as master sergeants, technical sergeants, and cooks were among the long-service veterans who would be entitled to release first.

Much of the agitation in Congress for speedier demobilization has resulted from a flood of mail reaching Senators and Representatives and General Marshall reminded them today that he gets mail also.

"And," he said, "I assure you, it is not all light reading."

General Marshall pointed to the needs for strength overseas in both Europe and the Orient. He said he had received an official communication from General MacArthur confirming his estimate that only 200,000 men would be required as a garrison force in Japan and Korea by next March.

However, he emphasized that the number of soldiers required for other Pacific bases and installations extending from Alaska through the Philippines has not been definitely set, although it is expected that around 1,400,000 men would probably still be in the military service somewhere in the Pacific.

"Our whole object is to return to civilian life at the earliest possible moment all members of our civilian army who have served the longest and fought the hardest," he said. "However, there is a tremendous obstacle in the way of transportation from all parts of the world and the demobilization processes themselves here in this country to be surmounted."

General Marshall was introduced by the newly-nominated Secretary of War, Robert P. Patterson. Mr. Patterson said the factors involved in demobilization were: 1. Occupation requirements. 2. Enforcement of surrender terms. 3. Shrinking the wartime Army to a peacetime size.

## Adm. Jacobs to 13th N. D.

Succeeding Rear Adm. Robert M. Griffin, Vice Admiral Randall Jacobs, formerly chief of the Navy Bureau of Personnel, has been assigned to duty as commandant of the 13th Naval District, with headquarters in Seattle, Wash.

Adm. Jacobs has been succeeded as chief of the personnel bureau by Vice Adm. L. E. Denfeld. The assignment carries the rank of vice admiral. Admiral Jacobs holds permanent rank of rear admiral, to which he will revert in his new assignment.

## Industrial Engineering Course

A short course in Industrial Engineering and other phases of management engineering will be given at NAS Alameda, starting about 1 Dec. 1945.

A small number of Naval officers who have had considerable experience in this field in private industry, whether in aeronautical or other manufacturing lines, will be trained for Staff Assistant to the A&R Officer at major air stations.

Army Post-War Studies  
(Continued from First Page)

Of basic interest, of course, are studies looking toward the effect such modern developments as the atomic bomb and directed missions will have on present organization and tactics and how best to modify the latter to give the greatest advantages to the former.

General Marshall in his address to Congress 20 Sept., said that full attention is now being given to demobilization and that post-war plans can wait until the middle of next year. Therefore it may be assumed that the boards and studies will continue for some time before concrete plans are ready for presentation to Congress for the final whipping up of a new National Defense Act.



## Navy Promotions

The following temporary promotions and reappointments of officers of the Regular Navy and Naval Reserve have been made:

### REGULAR NAVY

**Reappointed Commo.**  
Gordon Rowe  
**Comdr. to Capt.**  
Warren W. Whiteside, Stanley C. Strong  
Kemp Tolley  
W. S. Cunningham, A. D. Kilmartin  
H. C. Allan, Jr., Roy L. Johnson  
Malen Durski, James A. McNally  
Richard B. Levin, J. A. Prichard

**Comdr.-Ret. to Capt.-Ret.**  
C. W. Smith

**Reappointed Comdr.**  
J. N. Schofield

**Lt. Comdr. to Comdr.**  
L. W. Dufresne

**Lt. to Lt. Comdr.**  
T. V. Hennessey, W. W. Simons

**Reappointed Lt.**  
Ernest Rosseau, John A. Sprowl

**Lt. (jg) to Lt.**  
G. H. Waterman, K. R. MacKichan  
Tom H. Carden

**Ens. to Lt. (jg)**  
O. S. Carmichael, M. W. Shaw  
H. C. Betzinger

**Bosn. to Ch. Bosn.**  
L. N. Stockdale, Archie Woodward

**Gunner to Ch. Gunner**  
W. M. Cross

**Elec. to Ch. Elec.**  
Glen M. Cain, R. L. Headley

**Pharm. to Ch. Pharm.**  
Clarence Shearer

### NAVAL RESERVE

**Comdr. to Capt.**  
Henry Halpern, W. K. Kjeldsen  
M. R. Sanders, T. H. Ross  
C. S. Williams

**Reappointed Comdr.**  
H. M. McKinley, P. W. Roberts  
A. F. Olivet

**Lt. Comdr. to Comdr.**  
J. H. Pennington, R. R. Nelson  
B. M. Kern, W. F. McLallen, Jr.  
R. G. McClung

**Reappointed Lt. Comdr.**  
D. P. Boothe, Jr., L. F. Mulder  
R. H. Peters, J. M. L. Joslin  
C. T. Keppel

**Lt. to Lt. Comdr.**  
J. J. VanDale, A. G. Brown, Jr.  
John A. Komar, J. E. Haukon  
J. A. Fields, Jr., S. N. Shurcliff

**Lt. to Lt. Comdr.**  
A. V. Morris, R. W. Thompson  
C. C. Hosmer, E. C. Maiden  
R. Dunsford, Jr., W. H. Nichols  
H. R. Greatwood, E. C. Perry  
H. Koepf-Baker, J. R. Anderson  
W. MacGregor, W. H. Hauser  
B. M. Neyhart, B. P. Coffin  
F. A. Blackwood

**Lt. (jg) to Lt.**  
R. E. Tirk, J. L. Henderson, Jr.  
W. H. Egan, W. L. Ross  
C. B. Brown, W. S. Swanson  
T. P. Epsen, R. A. Uthoff  
J. H. Gilpin, Jr., D. A. Garrick  
P. G. Wilcox, A. B. Flite  
H. C. Davis

**Reappointed Lt.**  
M. V. Cornell, C. F. Crofford

**Reappointed Lt. (jg)**  
Leon Page, J. N. White

**Ens. to Lt. (jg)**  
B. W. Chandler, E. D. Jones  
C. M. Barnes, J. F. Juhl  
W. E. Cartwright, R. B. Leonard  
J. G. Ahern, W. B. Montgomery  
W. R. Benton, J. N. Outwater, 3rd  
P. M. Bernays, J. H. Vamonde  
C. R. Gerner, H. B. Webb  
R. L. Phillips, R. O. Burnham  
W. E. Tooley, Jr., M. Tarrak  
J. E. Toppins, M. K. Wenzel  
W. P. Gullledge, K. E. Wright  
O. D. Hall, Jr.

**Reappointed Ensign**  
Phillip R. Warren, R. L. Barron  
G. H. Wheatley, I. R. Engleman  
Carl E. Sturtz

## Lt. Hamilton Dead

Lt. Donald W. Hamilton, Jr., died of acute bronchitis on 3 February, it was learned this week.

Lieutenant Hamilton was a Japanese prisoner of War at a camp near Fukucka. He was the son of the late Lt. Comdr. Donald W. Hamilton, USN-Ret., and Mrs. Hamilton, the former Harriet Conger. He graduated from the United States Naval Academy in the class of 1938. While at the Academy he took a prominent part in football and boxing.

His wife, the former Marie O'Hara, daughter of Mr. and Mrs. Fred O'Hara of Norwich, N. Y., is the niece of the late Rear Adm. Charles C. Hartigan, USN. Lieutenant Hamilton was a nephew of Vice Admiral Aubrey W. Fitch, the Superintendent of the Naval Academy, and Mrs. Fitch.

## BUY VICTORY BONDS!

## Fleet Hq. Returns to Pearl

Fleet Adm. C. W. Nimitz, Commander in Chief, Pacific Fleet and Pacific Ocean Areas, will in the near future consolidate his headquarters at Pearl Harbor.

The movement is for the purpose of concentrating the administrative supervision of the Pacific Fleet at Pearl Harbor in close proximity to the major Fleet Type Commanders. Efficiency in the task of returning soldiers, marines and sailors home in the ships available will require close association with those type commanders and with reception agencies on the mainland. This task, together with other problems of the demobilization period, will assume greater relative importance now that the plans for the naval phases of the occupation of Japan have been completed, and are being smoothly carried out.

The facilities of the Advance Headquarters at Guam will be maintained for future use by CinCPac whenever required. Meanwhile they will be used by the Commander Marianas, Vice Admiral Murray, who now has additional responsibilities in connection with the recently surrendered Japanese positions in Bonins, Marianas, and Carolines.

The United States naval forces in Japanese waters soon will be assigned to the 5th Fleet under Admiral Raymond A. Spruance.

Admiral Spruance will relieve Admiral William F. Halsey, commander of the 3d Fleet, who was scheduled to leave Japan 20 September for the United States.

Vice Admiral Frank J. Fletcher, who commanded the North Pacific forces during the establishment of American naval occupation of northern Japanese ports, also will leave Japanese waters soon for his Aleutian headquarters.

## Retention of Rank

Legislation which would make the five star rank permanent for those who now hold it both in the Army and Navy at the same time make permanent the four star rank of the present Commandant of the Marine Corps, has passed the Senate this week.

The bill, S. 1354, if passed by the House would make the five star rank permanent for Gen. George C. Marshall, H. H. Arnold, Dwight Eisenhower and Douglas MacArthur in the Army. In the Navy the five star rank would be retained permanently by Fleet Admirals William D. Leahy, Ernest King, and Chester W. Nimitz.

Before leaving the Upper House the measure was amended so as to provide the commandant of the United States Marine Corps, General Alexander A. Vandegrift with a permanent four star rank. The amendment was adopted by the Senate.

When the measure is considered by the House, it is understood that an amendment will be offered out adopted to retain Admiral Russel R. Waesche, commandant of the United States Coast Guard, permanently in that rank.

## Medals

Representative Brooks has introduced legislation which, if passed would authorize the president to award a congressional medal of honor to Major Gen. Claire Lee Chennault of the Army of the United States.

According to the measure introduced by Mr. Brooks, the medal would be awarded to General Chennault in recognition of "his peerless leadership, heroic achievements, and great military victories."

At the same time legislation was also introduced to appoint Maj. Gen. Leslie R. Groves, now a major general in the Army of the United States to a major general of the line in the Regular Army of the United States.

In addition Representative Thomas proposed the procurement of a gold medal to be presented to General George C. Marshall, Chief of Staff, in the name of the people of the United States.

## Rear Adm. Bryant Honored

Rear Adm. Carleton F. Bryant, USN, Commander Fleet Operational Training Command, U. S. Atlantic Fleet, has been granted a Bar to the Distinguished Service Order by the British government, "for conspicuous service in operations which led to the successful Allied invasion of Southern France."

## Marine Corps Assignments

The following changes affecting the status of Marine Corps personnel have been announced.

Maj. Gen. Francis P. Mulcahy's previous orders to Headquarters, modified; admitted to Naval Hospital, San Diego, Calif.

Col. Jacob Lienhard, from Philadelphia, Pa., to await retirement.

Col. Wethered Woodworth, from Headquarters to be relieved from active duty.

Col. Samuel L. Howard, from overseas to Headquarters.

Col. Arthur F. Blunney, from Washington, D. C., to Guatemala City, Guatemala.

Col. Walter A. Wachter, from overseas to San Diego Area.

Col. Marion L. Dawson, from Miramar, Calif., to overseas.

Col. John R. Lanigan, from Jacksonville, Fla., to Dallas, Tex.

Lt. Col. John P. Brody, from San Diego Area to temporary duty, Quantico, Va.

Lt. Col. Harry S. Leon, from San Diego Area to temporary duty, Quantico, Va.

Lt. Col. Charles L. Cogswell, from overseas to San Francisco, Calif.

Lt. Col. George L. Hollett, Retd., from Washington, D. C., to resume inactive status on retired list.

Lt. Col. Richard Fagan, Retd., from overseas to San Francisco, Calif.

Lt. Col. William J. Piper, Jr., on discharge from hospital, Camp Lejeune, N. C., to Washington, D. C.

Lt. Col. Allen B. Gelger, from Headquarters to temporary duty, Quantico, Va.

Lt. Col. Harold Granger, from Miramar, Calif., to temporary duty, Quantico, Va.

Lt. Col. Melvin M. Smith, from San Francisco, Calif., to be relieved from active duty.

Lt. Col. Thomas E. Hicks, Jr., from overseas to be relieved from active duty.

Lt. Col. James J. Dagan, from Camp Lejeune, N. C., to be relieved from active duty.

Lt. Col. Ira J. Irwin, from Camp Lejeune, N. C., to be relieved from active duty.

Lt. Col. Charles W. McWille, from Headquarters, to be relieved from active duty.

Lt. Col. Elmer C. Woods' previous orders from overseas to San Diego Area modified to Parris Island, S. C.

Lt. Col. Henry H. Crockett's previous orders from Headquarters to temporary duty, Quantico, Va., revoked.

## Army and Navy Journal

149

September 22, 1945

Lt. Col. Ralph H. Coyte, from Quantico, Va., to be relieved from active duty.

Lt. Col. John H. Earle, Jr., from overseas to Miramar, Calif.

Lt. Col. Arthur H. Adams, from overseas to San Diego Area.

Lt. Col. John H. Goodwin, from San Diego Area, to be relieved from active duty.

Lt. Col. Joseph A. Hagan, Retd., from Norfolk, Va., to resume inactive status on retired list.

Lt. Col. Porcher P. Hopkins, from overseas to be relieved from active duty.

Lt. Col. Bernard W. Schotters, from overseas to be relieved from active duty.

Lt. Col. James F. Sherman, from overseas to be relieved from active duty.

Lt. Col. Philip G. Strong, from San Diego Area to be relieved from active duty.

Lt. Col. James L. Webb, from Headquarters to temporary duty, Quantico, Va.

Lt. Col. Edward Van H. Mendenhall, Jr., from Miramar, Calif., to temporary duty, Quantico, Va.; thence to Cherry Point, N. C.

Lt. Col. Curtis T. Beecher, from overseas to San Francisco, Calif.

Lt. Col. William F. Whitaker, from overseas to San Diego Area.

Lt. Col. Chester J. Salazar, from overseas, to San Diego Area.

Lt. Col. John A. Anderson, from temporary duty, Quantico, Va., to overseas.

Lt. Col. Thomas W. Brundage, Jr., from temporary duty, Quantico, Va., to Headquarters.

Lt. Col. John F. Carey, from Lima, Peru, to Cherry Point, N. C.

Lt. Col. Albert Creal, from Washington, D. C., to temporary duty, Quantico, Va.

Lt. Col. James B. Glennon, Jr., from Camp Lejeune, N. C., to temporary duty, Quantico, Va.

Lt. Col. Bert W. Hardy, Jr., from San Diego Area, to be relieved from active duty.

Lt. Col. Joseph R. Jacyno, from Headquarters to be relieved from active duty.

Lt. Col. Alexander A. Vandegrift, Jr., from temporary duty, Quantico, Va., to Jacksonville, Fla.

Lt. Col. Robert B. Cox, from overseas to Miramar, Calif.

Lt. Col. Norman J. Anderson, from overseas to Miramar, Calif.

## CLASSIFIED

Rate: 7 cents per word; minimum \$1.00. Forms close 5 p. m. Wednesdays. Payment must be made before publication. Phone Hobart 6477.

## NEAR ANNAPOLIS, MARYLAND

RIVER CLUB ESTATES. Wanted retired officer to take charge of sub-division. Half acres or more for sale also. "Little Mount Vernon" House now available with five acres, \$7,350. Restricted but not expensive. Existing homes occupied by officer personnel. Write: River Club Estates, Edgewater, Maryland. Call Washington, North 2792.

## REAL ESTATE FOR SALE

30 Acres on salt water, Gloucester-Mathews section of Virginia. Home with 10 rooms and bath is located in grove overlooking the water. Price \$7,500.00. G. B. LORRAINE, Law Building, Richmond 19, Virginia.

## RETIRE TO LIVE

STUART, FLORIDA. A good town, good climate, good fishing, good people. Worth looking over. Good values in real estate. THEO. DEHON & SON, Stuart, Florida.

## REAL ESTATE

RETIRING? LIVE IN ASHEVILLE, N. C. Finest all year around climate in the United States. Cool summers. No mosquitos. Open winters. Elevation 2,200 feet. Good golf, hunting and fishing. For full information write Lt. Col. C. B. King, Retired, c/o Dillard Realty Company, Realtors, Asheville, N. C.

Attractive homes for retired officers priced from \$5,500.00. In the friendly little City of Bradenton. Write to Sidney G. Brown, Realtor, with Wyman, Green and Blalock, Inc., Bradenton, Florida.

BRADENTON, FLORIDA. Two bedroom bungalow with large screened porch, \$5,500.00. This house is in excellent condition and the location is good. Mrs. C. B. Watkins with Wyman, Green & Blalock, Inc.

Miami Beach homes are easily financed. Contact Col. Ralph M. Parker, c/o Marion Butler, Realtor, 1616 Alton Road, Miami Beach, Florida.

## CALIFORNIA RETIREMENT HOMES

That California retirement home in the sun. Knowing service families needs, I specialize in locating that home you seek. Write fully, RETIREMENT REALTY, 1108 Cortez Avenue, Burlingame, California.

## FOR SALE

Virginia Tidewater farms. All sizes and price range. Free catalogue. Easy terms finance. Productive farms 20 years at 4% interest. Only 2% curtailment per year required. W. C. BROOKS, Realtor, Phone 89F3, Box 383, Tappahannock, Virginia.

## BOOKS

We buy Confederate books. What have you? Prompt replies. Cash with order. R. O'HARE, 222 Eastholm Road, Schenectady, New York.

## COMPLETE AIRMAIL CATALOG

128 pages, many illustrations. Interesting articles—for 10c postage. HARRIS & CO., 10 Transit Building, Boston 17.

## BRADENTON, FLORIDA—INVITES YOU

Fishing and boating in Gulf, bays and rivers—all kinds of facilities for outdoor recreation—splendid hotels, apartments and cottages. For further information write Bradenton Chamber of Commerce.

## WEST POINT SONGS

MUSIC BOOK, 120 pages, handsome cloth binding; valuable souvenir-gift. \$1.50 postpaid. Send check to F. C. Mayer (Editor) Organist, West Point, New York.

## FOREIGN LANGUAGE DICTIONARIES

Dictionaries and Grammars for 102 languages. Catalog free. Schoenhof's, Box 6, Harvard Square, Cambridge, Massachusetts.

## FIREARMS

Antique and modern firearms and edged weapons bought and sold. Catalog 25c. Robert Abels, 800-N Lexington Ave., New York 21.

## SERVICEMEN

RUBBER STAMPS for marking your personal things—7-16" letters, figures, periods, hyphens—per gross \$2.95. Holders and type box free with 5 or more gross. 50 names for \$15.00. 2 Names with indelible outfit mailed promptly for only \$1.00. EZ RUBBER STAMP WORKS, 519 Shirley Street, Wintthrop 52, Massachusetts.

**"Selection Out" for Navy**  
(Continued from First Page)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Navy shall, whenever he deems it advisable, appoint boards of officers to consider and recommend for retirement officers of the line and staff corps of the Regular Navy serving in the ranks of rear admiral and commodore and officers of the Regular Marine Corps serving in the ranks of major general and brigadier general.

Sec. 2. (a) The boards to consider and recommend for retirement officers of the Navy serving in the ranks of rear admiral and commodore shall consist of not less than five officers of the Regular Navy serving in ranks above that of rear admiral except that officers of the staff corps of the rank of rear admiral may be appointed as members of any board appointed for the consideration and recommendation of officers of the staff corps for retirement.

(b) The boards to consider and recommend for retirement officers of the Marine Corps serving in the rank of major general shall consist, so far as practicable, of three line officers of the Regular Marine Corps serving in ranks above that of major general. If there be an insufficient number of such officers available, the deficiency shall be supplied by the appointment to the board of officers of the line of the Regular Navy serving in ranks above that of rear admiral.

(c) The boards to consider and recommend for retirement officers of the Marine Corps serving in the rank of brigadier general shall consist, so far as practicable, of five line officers of the Regular Marine Corps serving in ranks above that of brigadier general. If there be an insufficient number of such officers available, the deficiency shall be supplied by the appointment to the board of officers of the line of the Regular Navy serving in the rank of rear admiral or above.

Sec. 3. The Secretary of the Navy is authorized to convene boards of officers of the Regular Navy and Marine Corps to consider and recommend for retirement officers of the Regular Navy and Marine Corps serving in the ranks of captain and below in the Navy, and colonel and below in the Marine Corps, within such categories or groups of such officers as shall be specified in the precepts convening such boards. The members of such boards shall be senior to any officer under consideration.

Sec. 4. The recommendations of each board convened pursuant to this Act shall be submitted by the Secretary of the Navy to the President for approval or disapproval, in whole or in part.

Sec. 5. Each officer recommended for retirement pursuant to this Act shall, if such recommendation be approved by the President, be placed on the retired list on the first day of such month as may be set by the Secretary of the Navy but not later than the first day of the seventh month after the date of approval by the President.

Sec. 6. (a) Each officer retired pursuant to the recommendation of boards appointed under section 1 hereof shall be placed on the retired list with the highest grade and rank held by him on the active list and with retired pay equal to 75 per centum of the highest pay to which he was entitled while serving on the active list.

(b) Each officer retired pursuant to the recommendation of boards appointed under section 3 hereof shall be placed on the retired list with the highest rank held by him (Please turn to Next Page)

**FINANCE****Financial Digest**

President Truman, 17 Sept. appointed Paul H. Appleby assistant director of the Budget Bureau, a post which he resigned 1 Dec. 1944.

Senator Murray, (Dem., Mont.) in announcing the release of a preliminary report concerning the immediate and continuing problems of the construction industry, said this week that the Office of War Mobilization and Reconversion has not yet established a clear-cut policy for construction during the reconversion period. The report, entitled "Construction, Small Business and Employment," points up not only the immediate problems of materials, manpower and lack of advance planning which face the construction industry, but also the crucial problems which will stand in the way of achieving long-term stability in the volume of construction. The report was issued 12 Sept. by the Senate Special Committee to Study Problems of American Small Business, of which Senator Murray is chairman.

The 12 Sept. statement of the Board of Governors of the Federal Reserve System reports that bank debits as reported by banks in 334 leading centers for the month of August aggregated \$73,231 million. During the past three months total debits for the same centers amounted to \$250,417 million, or 11 per cent above the total reported for the corresponding period a year ago. At the banks in New York City there was an increase of 19 per cent compared with the corresponding three-months period a year ago, and at the 333 other centers there was an increase of six per cent.

Representative Robertson, (Dem., Va.), member of the Ways and Means Committee, has proposed elimination of the three per cent "normal" tax on personal incomes and the 95 per cent excess profits tax on corporations, which would result in tax reduction of \$4 billion in 1946. This means of lowering individual taxes, Representative Robertson said, would be more equitable than the plan of Representative Knutson, (Rep., Minn.), who suggested a straight 20 per cent reduction. The three per cent levy, Representative Robertson pointed out, was originally imposed as a necessary war measure. Purchasing power, he maintained, would be sustained during a period of falling national income through its elimination.

**Commands Ft. Bragg**

Brig. Gen. Theodore L. Futch, who has been in command of the 35th Division Artillery, has been named Commanding General of Fort Bragg, succeeding Brig. Gen. John T. Kennedy, World War II Commander of the Post.

Col. Landon C. Rosser is serving as Post Commander until General Futch arrives to assume command. General Kennedy, who came to Fort Bragg under orders dated 2 Oct. 1941, was in command continuously until 15 Sept. 1945, embracing the entire period of World War II.

**MERCHANT MARINE****Merchant Marine**

A reduction in the capacity for training men for the United States Merchant Marine was announced by Capt. Edward Macauley, USN-Ret., Deputy Administrator for Labor Relations, Training, and Recruitment and Manning for the War Shipping Administration.

According to Captain Macauley the training of radio operators is practically at an end since the number required for peacetime needs has been reached.

At the same time it was announced that Officer's Schools at Fort Trumbull, New London, Conn. and at Alameda, Calif. are being reduced in the number of students, in keeping with manpower requirements. All of the specialists schools are being consolidated at the training station at Sheephead Bay, Brooklyn, N. Y. and the number of students in training will be sharply reduced.

Upgrading will be continued as required but will be conducted at established stations in the near future and some of the upgrade schools at the various ports will be closed, with the exception of schools for the retraining of cooks, bakers and stewards as part of the program to improve the quality of food served aboard ships.

It was stated, however, that men are still needed to man merchant ships in excess of those presently available and will be needed for some months to come.

Four gallant "Ladies," battle-scarred beyond repair in war service, have been discharged from active duty and are to be sold for scrap, the United States Maritime Commission announced.

The vessels include the Liberty Ships John Banvard, James K. Polk, Howard L. Gibson, and Thomas Ruffin.

In its invitations to bid, Maritime officials stipulated that the vessels shall at no time be operated and that the buyer, within one year from the date of delivery of the vessel, shall scrap, dismantle, dismember, or destroy the vessel, including the hull, engines, machinery and major items of equipment, at a plant or yard situated within the continental limits of the United States.

Having carried forward its wartime building program up to the fall of Japan, the United States Maritime Commission this week announced that merchant shipbuilding construction for the month of August fell to a 36 month low with delivery of 84 vessels aggregating 825,817 deadweight tons from 30 shipyards.

The construction program, which hit a peak in deliveries in December 1943, is now on a downward trend.

Eight of the ships delivered were for military use. Other types were 28 Victory cargo, 6 Liberty cargo, 10 C-type cargo, 3 Liberty colliers, 18 coastal cargo, 9 standard tankers, and 2 coastal tankers.

Creation of a Division of Vessel Disposal and Government Aids to take charge of disposal of all Government-owned ships of 2,000 gross tons and over, pending enactment of a ship sales bill by Congress, was announced by the United States Maritime Commission.

In the new Division are merged the activities of the Commission's examining Division and the ship sales activities of the Division of Large Vessel Disposal.

**Navy Salvage**

The United States Navy has salvaged military and naval craft valued at millions of dollars while clearing harbors for the onward advance of forces of the United Nations. In addition, an estimated \$600,000,000 worth of sunken ships and cargo has been recovered in coastal salvage operations.

At the same time it was learned that Navy Material Recovery Units, have recovered more than \$16,000,000 worth of vital material for immediate re-use by both the Navy and Army.

**QUICK LOANS TO REGULAR OFFICERS**

Monthly payments.  
W. H. HOFHEIMER CO., INC.  
300-A Citizens Bank Bldg., Norfolk, Va.

**Medical Personnel**

(Continued from First Page)

same plans that were utilized during the war of 1917-18. He charged that these plans were accepted without revision in light of the military experience and medical advancements of the succeeding 20 years.

"With rapid transportation available," Col. Holbrook asserted, "it is difficult to justify the staffing of all hospital beds throughout the world with medical personnel on this basis when our civilian population was being neglected and the future of American medicine was being jeopardized."

Prior to Col. Holbrook's testimony, Senator Sheridan Downey of California made a statement before the Committee explaining the Army representative's position. He said that before Col. Holbrook was chosen to handle the investigation it was his intention to have the probe made by a medical Army officer who would be in a position to determine and know the relevant facts and to draw proper conclusions therefrom.

**Praises Col. Holbrook**

In this connection Senator Downey told the Committee:

"A fellow Senator recommended Colonel Holbrook of Tucson, Arizona, as a medical officer ideally prepared to carry on this investigation. Colonel Holbrook was represented by him as being a man of extreme candor, courage and objective intellect. Upon investigation, I discovered that Doctor Holbrook had a very high reputation among civilian doctors and among his brother military officers as well, whereupon I asked the consent of the Chairman of the Committee, Mr. Thomas, and of my colleagues of the subcommittee, Mr. Johnson and Mr. Gurney, for permission to request the War Department to assign Colonel Holbrook to the Military Affairs Committee not only for the purpose of the investigation but, likewise, to suggest to the Army officers themselves what he believed would be the most expeditious way of demobilizing excess military medical officers. Colonel Holbrook undertook this task with the realization that he was entering upon a delicate and embarrassing mission although highly important because he was placed in a position where he was compelled to pass judgment on the record and action of his superiors. To obviate all possible embarrassment and to place Colonel Holbrook in as strategic a position as possible, the Under Secretary of War, Mr. Patterson, ordered that Colonel Holbrook should be assigned to the Legislative and Liaison Division, War Department, Special Staff, and attached to the Military Affairs Committee for duty."

**Lists "Fallacies"**

Colonel Holbrook listed four fundamental "fallacies" in present-day medical tactics as follows:

1. That the doctor is comparable to the fireman; you do not need him all the time but he must be there when you do.
2. That the doctor in the hospital is an inseparable part of the beds, equipment and physical properties and that he remains with that hospital as a part of it whether there are any patients or not.
3. That the numerical strength of military units is the determining factor in arriving at the number of doctors required.

4. That the doctor must be first an officer and second a professional man.

The Committee investigator described as a "common delusion" the belief that a reduction in medical strength would result in our boys being deprived of life-saving services of the doctors. As an example he said that the 50 doctors assigned to a 15,000-man infantry division was far too many for simple medical care and preventive medicine of a group of healthy young men. On the other hand, the Colonel said that the figure was far too few to care for the medical requirements of the division in battle. He reiterated that the Army's doctor requirements could be vastly reduced if the principle of mobility were adopted. He said there was no reason why a surgeon should not operate one week in New Guinea and the next week in Italy. His statement was based upon present-day transportation methods.

**Department of Health**

Meanwhile Col. Holbrook outlined a plan for a national department of health, under a Cabinet officer who would be in charge of the military medical services and rank with commanders of Army, Navy and Air forces. In making his proposal he reminded the Committee that today the United States is possibly the only (Please turn to Next Page)

**GOVERNMENT EMPLOYEES  
INSURANCE COMPANY**

CLEAVES RHEA, PRESIDENT  
LEO GOODWIN, EXECUTIVE VICE-PRESIDENT



A Nation-wide Legal Reserve Stock Automobile Insurance Company serving careful and responsible car-owners of the Armed Forces on Active or In-Active Status.

Before you renew your current automobile insurance learn more about this lower cost yet broader form policy by writing direct to the Company. It is not available through agents or brokers.

Standard Policy written on participating basis for Virginia residents. Current dividend rate based upon 55% of total premium.

COMPLETE AUTOMOBILE INSURANCE COVERAGE — NATIONWIDE SERVICE

DEPT. 11A  
INVESTMENT BUILDING, WASHINGTON 5, D. C.



## "Selection Out" for Navy

(Continued from Preceding Page)

on the active list, if his performance of duty in such rank has been satisfactory. In any case where, in the opinion of the board, an officer recommended for retirement pursuant to section 3 has not rendered satisfactory service in the highest rank held by him on the active list, he shall be placed on the retired list with the next lower rank but not lower than his permanent rank. The performance of duty, by an officer in the highest rank held by him on the active list shall be considered as satisfactory unless the board shall find that his performance of duty in such rank was not satisfactory. Officers retired pursuant to this section shall receive retired pay at the rate of 2½ per centum of the active-duty pay of the rank in which retired, multiplied by the number of years of service for which entitled to credit in the computation of their pay on the active list, not to exceed a total of 75 per centum of said active-duty pay: Provided, That a fractional year of six months or more shall be considered a full year in computing the number of years service by which the rate of 2½ per centum is multiplied.

(c) Nothing within this section shall prevent any officer from being placed on the retired list with the highest rank and with the highest retired pay to which he might be entitled under other provisions of law.

Sec. 7. The President, in his discretion, may discharge from the service without advanced pay any officer of the Regular Navy or Regular Marine Corps who is serving in his permanent rank and who shall have completed less than seven years of active commissioned service.

Sec. 8. When any officer of the Navy or Marine Corps serving in a rank below that of Fleet Admiral has attained the age of sixty-two years, he shall be placed upon the retired list by the President: Provided, however, That the President may in his discretion defer placing any such officer upon the retired list for the length of time the President deems advisable: Provided further, That not more than ten officers, the placing of whom upon the retired list has been deferred pursuant to authority contained in the first proviso of this section, shall be on the active list at any one time: And provided further, That no officer of the Navy or Marine Corps shall be placed upon the retired list pursuant to this section until the first day of the sixth month following the date of approval of this Act or until the date upon which he would be retired for age pursuant to law existing prior to the date of approval of this Act, whichever may be the earlier.

Sec. 9. Repeals conflicting acts.

Sec. 10. The provisions of sections 3, 6 (b), and 7 of this Act shall terminate on 30 June of the fiscal year following that in which the present war shall be declared to be ended by proclamation of the President or by an Act or resolution of Congress.

## Medical Personnel

(Continued from Preceding Page)

major nation not utilizing a minister of health or similar official whose concern is national health. He warned that it is both necessary and urgent that some centralization solution be worked out.

Under his proposal the administration of all government hospitals, whether the patients are soldiers, sailors or veterans, would be consolidated, in the interest of economy and efficiency, into one division; by connection with his proposed Department of Health, Col. Holbrook visualized a Department of National Defense. The Surgeon Generals of the Army, Navy, Air Forces, Public Health Service and Veterans' Bureau would each have a representative in the Hospital Division.

Colonel Holbrook said that American medicine, public-spirited individuals, labor and industry are supporting the idea of a nation-wide health-insurance program, under which benefits could be extended to most of the population. If such a system is set up, he expects it will meet all operating expenses, with the Government paying a part of the initial cost of hospitals.

## Navy Doctors

Following Colonel Holbrook's testimony Adm. Ross McIntire, Surgeon General of the Navy, told the committee that it was his desire to release doctors from the Navy as quickly as possible. He said that the present basis for separation from the Navy was: 1, personal hardship; 2, community need; 3, point system; 4, those essential for teaching in civilian clinics.

Adm. McIntire said that doctors had to be retained by the Navy temporarily because Navy installations and ships have to be manned for the present until ships are laid up and shore installations are closed.

By 1 January, Adm. McIntire said, 1,700 doctors will have been released from active duty and that by 1 September 1946 approximately 8,000 will have been released. This, he said, was about 75 per cent of the Reserves now in the Navy.

The Admiral said that of the 14,500 doctors in the Navy during the war 12,000 were Reserves and 1,968 were Regulars, including retired officers on active duty. He added, however, that development of conditions may permit faster release at a later date.

## Recommends Single Food Agency

Postwar purchase of all food for the armed forces by a single War Department agency is recommended in a report released 16 Sept. by the War Department Special Food Committee, composed of civilian food industry leaders appointed by Under Secretary of War Patterson to survey the Army's entire food situation.

With regard to the Army Quartermaster Corps' procurement of many types of food on behalf of the Navy, Marine Corps, Coast Guard and other agencies during the war, the Committee reports that "the Army's function of purchasing food for a number of services and organizations besides itself has been of great aid in eliminating conflicting demands on industry."

In observing that the Army's over-all subsistence program has been carefully planned and adequately implemented by exceptionally well qualified military and civilian personnel, the report calls particular attention to the fact that the Army's cost of feeding one man per day has increased only 29 per cent since 1941, whereas wholesale food prices, according to Bureau of Labor Statistics figures, have mounted 27.7 per cent.

In response to a specific request of Lt. Gen. Edmund B. Gregory, The Quartermaster General, the committee investigated the procurement of articles for resale in Post Exchanges overseas.

In securing information for its report, the Committee visited the Office of The Quartermaster General, Washington, D. C.; Market Center, Field Headquarters and Chicago Quartermaster Depot, Chicago, Ill.; Schenectady Army Service Forces Depot, Schenectady, N. Y.; New York Port of Embarkation and Quartermaster Market Center, New York, N. Y.; Jersey City Quartermaster Depot, Jersey City, N. J.; and Camp Shanks, N. Y.

## Mobile Navy Power Plant

Vice Admiral E. L. Cochrane, USN this week announced that the city of Manila is being supplied with electric power from the first sea-going power station of the kind to be placed in operation.

Supplying power equivalent to that used by a city of twenty to thirty thousand population the "plant" has been generating current for Manila since 13 April 1945.

According to Admiral Cochrane, the secret of the mobile power unit is that it is not only a generating plant of considerable kilowatt output but is also a fighting vessel capable of disconnecting from its temporary connection with the beach and steaming off to the other duty at a moment's notice.

It is the destroyer escort, the USS Wiseman, skippered by Comdr. William B. McLaren, USNR. The vessel was converted at the Charleston Navy Yard, and now on the highly specialized duty of supplying temporary power to the bomb stricken Philippine Capital.

## Tokyo Fliers to U. S.

After 40 months of solitary confinement in Japanese prison camps, three Army Air Forces men, who flew on the Doolittle mission against the Japanese homeland on 18 April, 1942, returned to the United States this week. The men, 1st Lt. Robert L. Hite, 1st Lt. C. Jay Nielson and Sgt. Jacob D. De Shazer, were liberated from a prison camp at Pieping, China, 20 Aug. by a rescue party that parachuted into the city.

Lt. George Barr, also liberated, was evacuated to Chungking, where he remained because of his physical condition. The other fliers have been undergoing a physical check-up at Walter Reed General Hospital, Washington, D. C.

## "World War II" Official Name

President Truman has approved the designation "World War II" as the official title of the recent conflict between the United States and Japan and the Central Powers, it has been announced.

The President's action was taken in the form of an approval of a memo received from Secretary of War Stimson and Secretary of the Navy Forrestal. Complete text of the memo to the President is as follows:

President Wilson, under date of July 31, 1919, addressed a letter to Secretary of War Baker which read, in part, as follows:

"It is hard to find a satisfactory 'official' name for the war, but the best, I think, that has been suggested is 'The World War', and I hope that your judgment will concur."

Subsequently, under date of 7 October, 1919, War Department General Orders No. 115 directed:

"The war against the Central Powers of Europe, in which the United States has taken part, will hereafter be designated in all official communications and publications as 'The World War'."

As a matter of simplicity and to insure uniform terminology, it is recommended that "World War II" be the officially designated name for the present war covering all theaters and the entire period of hostilities.

The term "World War II" has been used in at least seven public laws to designate this period of hostilities. Analysis of publications and radio programs indicates that this term has been accepted by common usage.

If this recommendation is approved it is further recommended that the title "World War II" be published in the Federal Register as the official name of the present war.

## Praise Gen. Richardson

(From the Honolulu Advertiser)

The story of the Pacific war is the story of supply. The Navy without its tremendous fleet train would not have been able to hunt down the Jap fleet in its own home waters and to stay there indefinitely. The Army's story of supply is no less thrilling or enterprising. At Oahu, the seat of what became to be known as the Mid-Pacific command, under polished, meticulous Lt. Gen. Robert C. Richardson, Jr., supplies were kept on the roll. With coordination and timing that was perfect, they followed on the heels of Army assault forces who marched with the Navy and Marines from the Gilberts through the Marshalls, Marianas, Palau and Okinawa. Today, many of those same divisions are in Japan. Supply, the abundance of it, the endlessness of it, and its being where and when it was wanted was the major factor in the quick victory in a battlefield that covered about a third of the globe.

Equally important in the Mid-Pacific role in war was General Richardson's organization of a training center here which first taught the GI how to fight in a jungle against a jungle-wise Jap, later how to fight in open country, towns and villages peculiar to Japanese areas. Two weeks of the toughest training anywhere in the Pacific saved countless lives of American fighting men and pushed the accelerator down on victory. Ten Army divisions went through the jungle school in addition to some Marines and many Seabees.

War historians will remember Richardson as the man who kept the Army's position in the Central Pacific orderly—an important weapon in forging the precision instrument of victory.

## Indiantown Gap Personnel

Brig. Gen. Malcolm F. Lindsey, Commanding General of Indiantown Gap (Pa.) Military Reservation, has announced a number of changes in the post's administrative organization.

Col. Frederick Morgan of the Harrisburg Sub-District has been named post Executive Officer to succeed Col. Herbert H. Glidden, who has transferred to Fort Knox, Ky.

Col. Joseph Haig becomes the Executive Officer of the Personnel Center and also will serve as Commanding Officer of the Separation Center. The Separation Center now will be divided into three units with Lt. Col. Sidney Kitay, Lt. Col. Robert W. Springer and Lt. Col. Harrison S. Markham as the Commanding Officers. Capt. William D. Long succeeds Lt. Col. Kitay as the Director of Personnel.

## Gen. Prichard Assigned

Maj. Gen. Vernon E. Prichard, former Commanding General of the First Armored Division in Italy, has been assigned to the Army-Navy Liquidation Commissioner's Office for duty in Europe.

General Prichard will be Assistant Central Field Commissioner for the European and Mediterranean areas, with headquarters in Paris.

## Praises Eighth Army

*Eighth Army Headquarters, Yokohama, Japan*—Final victory over Japan has brought to Lt. Gen. Robert L. Eichelberger and his Eighth Army the personal congratulations of the Secretary of War for the victory that "you and the fine soldiers of your Eighth Army did so much to bring about."

The text of Secretary Stimson's message follows:

"I wish to add my personal congratulations to the gratitude felt by our whole nation in its rejoicing over the victory that you and the fine soldiers of your Eighth Army did so much to bring about. Few military forces have ever triumphed over such severe tests as those experienced on your determined advance from Buna to Mindanao. The new chapters you have written in America's annals are in the highest traditions of gallantry. They remain as tributes to your untiring devotion to duty and qualities of leadership that have earned universal esteem."

## Regular Army Doctors

As a means of providing qualified doctors for the peace time, Army plans have been formulated to interest Medical Corps officers who are serving for the duration of the war to apply for commission in the Regular Army.

Among the more important attractions which will be offered Medical Corps officers who remain in the Army is assurance of a professional career offering broader possibilities in a larger field than the practice of the average civilian doctor affords.

In addition it is planned that the training and the assignments of Army doctors will be arranged to aid the Army doctors in obtaining board certification for specialties from the recognized civilian specialty boards. Graduate training will also be continued with the establishment of Army fellowships, residences and special courses.

It is also pointed out that the Army also affords security in its pension system, hospitalization care and other considerations not usually available in civilian practice.

## Women Try "Wet-Cold" Suits

Twenty-two women, selected from the Army Nurse Corps, the WAC and the American Red Cross are learning to wear the Army's efficient "wet-cold" weather uniform under a training program directed by Lt. Gen. E. B. Gregory, The Quartermaster General, the War Department announced. Since many women of the services will continue to serve with armies of occupation, their wearing apparel will necessarily conform to the climate where they serve.

The course which the women will receive includes one week of classroom instruction at Camp Lee, Virginia, and one week of rigorous outdoor life on Mount Washington, N. H., which boasts at certain seasons the "world's worst weather." They will live under field conditions, sleeping nightly in sleeping bags under Army shelter tents.

## Status of Promotion

**Promotions and Vacancies on the Promotion List (Cumulative) and Promotions on the Non-Promotion List Since 7 Sept. 1945**

Last promotion to the grade of col.—William F. Freehoff, INF No. 66; Vacancies—None; Last nomination to the grade of col.—Harold C. Mandell, CAV No. 79.

Senior Lt. Col.—Rexford E. Willoughby, CAV No. 67.

Last promotion to the grade of Lt. Col.—James H. Dickie, FD No. 78.

Last promotion to the grade of maj.—Paul E. MacLaughlin, INF No. 197.

Last promotion to the grade of capt.—Raymond P. Todd, AC No. 278.

Last promotion to the grade of 1st lt.—Raymond L. Hoff, QMC No. 660.

## Duty With AFRS

Major Edgar L. Tidwell, after serving for 37 months overseas, has been placed on duty with the Broadcast Service Section of the Armed Forces Radio Service at Los Angeles. His last previous duty was managing the AFR Station in Manila. Just returned from England and also placed with Broadcast Service, according to Col. Thomas H. A. Lewis, Commandant, is Lt. John Melson, USNR.

Military Railway Service in the Mediterranean Theater recently turned back to the Italians 5,164 miles of track formerly operated by American and British soldiers.



## Post-War Fleet

Secretary of the Navy James Forrestal this week told Congress that the mission of the United States Navy is to control the seas by whatever weapons are most effective.

The Secretary's statement was made during testimony before the House Naval Affairs Committee which held hearings on the pending concurrent resolution 80 which seeks to determine the size of the immediate post-war Navy.

Freedom of this country, Secretary Forrestal said, will be in the control of the seas and of the skies above them. He said that the post war active fleet—together with auxiliary craft in proportion would number approximately 300 major combatant ships, or about 28 per cent of the total fleet.

"In each of the past two wars, our enemies failed to control the seas—and they were defeated. In the future, as in the past, the key to victory and to the freedom of this country will be in the control of the seas and of the skies above them." He said "Attacks upon us or attacks by us must cross on, over or under the sea. That fact is an accident of geography which you can confirm by any map. No enemy can reach us without coming across the sea. We cannot reach or defeat an aggressor without crossing the sea. Therefore, control of the ocean and of the air over it is the key to our own security. It is also the key to our ability to participate as a member of a world organization in the suppression of aggression wherever it may occur.

"The control of the sea and of the air above it is the mission of the United States Navy—and the Navy will continue to discharge that mission with whatever weapons are most effective."

Replying to the atomic bomb and guided missiles argument against the continuing value of the Navy, Secretary Forrestal asserted that "The Navy is alert to the possible long-term effects of atomic power both as an explosive and as a propellant." He then invited the members of the committee to attend an off-the-record conference on "set-off inventions" with civilian scientists as witnesses.

Continuing, the Secretary declared that "If we were to give away our Fleet today and rely wholly on the atomic bomb, we would lose control of the sea. In my opinion, therefore, there is no doubt about the necessity for the continuation of a modern Navy, its carrier forces, its surface and submarine forces, and its amphibious arm capable of taking and holding beachheads."

As for the size of Navy necessary, the Secretary stated that that would have to be determined by the tasks set for it to carry out in conjunction with the Army, and that these tasks supposedly would be (1) to maintain the security of the continental United States and its overseas possessions; (2) to maintain the security of the Western Hemisphere—made necessary by the Monroe Doctrine and the Act of Chapultepec; and (3) to carry out the commitments of the United States to preserve the peace of the world.

Later in the hearing, in response to prodding questioning, the Secretary stated that the size of the Navy as outlined in the Concurrent Resolution has his approval and that of the Navy Department, and Admiral Ernest J. King, Commander in Chief of the Navy, in a prepared statement, declared it as his belief that this should be "the minimum" size of the Navy.

Declaring that "the size of the Navy must vary from time to time in direct ratio with the blood pressure of the international community," Secretary Forrestal stated that plans call for dividing any approved Navy into three components—an active fleet, fully commissioned; a ready reserve of relatively few vessels, with nucleus crews; and a laid-up reserve, with care-taker crews on board. The active fleet would be composed of 30 per cent of the entire fleet; the ready reserve would be ten per cent of the fleet, and the laid-up reserve would constitute 60 per cent.

According to the Secretary, the active fleet and ready reserve would be approximately as follows: 11 battleships, 15 air-

craft carriers, including 3 45,000-ton carriers, 21 escort carriers, 20 heavy and large cruisers, 29 light cruisers, 176 destroyers, 40 destroyer escorts, and 90 submarines, plus tenders, mine, patrol, service, and amphibious craft. All the battleships, carriers, cruisers and destroyers, and submarines listed here are new ships, completed since our defense program in 1940.

The laid-up reserve would include 7 old battleships, 22 carriers, all built since 1940; 58 escort carriers, all new since 1940; 14 heavy cruisers, 19 light cruisers, 191 destroyers, 256 destroyer escorts, 110 submarines, as well as mine, patrol, service and amphibious forces.

Admiral King declared that "The (proposed) active Navy is a balanced organization, ready to go anywhere in the world that it may be needed, ready to do, within the limits of its 'ways and means,' anything that it has done during the war now ended."

In the course of the committee quizzing, Secretary Forrestal agreed with a committee member that "We want a Navy large enough to discourage any hope of other navies that they could defeat us."

As for perimeter bases to be used in fulfilling the tasks of the Navy, Secretary Forrestal stated that "we propose major bases at Kodiak and Adak in the Aleutians; Hawaii; Balboa in the Canal Zone; Guam, Saipan and Tinian in the Marianas; the Bonin-Volcano Islands; perhaps the Ryukyus; Manus in the Admiralties (if Australia will grant us the right to a base there); and the Philippines. In the Atlantic we suggest major installations at Argentina in New Foundland, Bermuda, San Juan, Guantanamo Bay, Coco Solo, and Trinidad."

In answer to a question, the Secretary stated that "no combatant ships are to be gotten rid of to other nations."

As for the probable cost of maintaining the proposed Navy the Secretary set a tentative figure of \$2,800,000,000 to \$4,000,000,000.

As for the necessary naval air-power, Secretary Forrestal said that less than 12,000 planes, 8,000 in full active duty status, will be necessary.

Replying to a question as to whether he favors trusteeship in controlling island bases, Secretary Forrestal declared that whatever diplomacy arranges in the way of cooperation will be approved by the Navy so long as no one has power to interfere with our defense.

In answer to a question as to whether the Resolution strength of the Navy would be strong enough for defense of the United States in the Atlantic and Pacific, the Secretary said it would be,—30 per cent to be used in the Atlantic, 40 per cent on the West Coast, and 30 per cent in the West Pacific, all three sections to constitute one mobile fleet to be used where needed.

On Thursday, the committee had as witnesses Admiral F. J. Horne, Vice Chief of Naval Operations; Rear Admiral Sherman E. Burroughs, Jr., of the Bureau of Operations, and the Hon. John L. Sullivan, Assistant Secretary of the Navy for Air.

Admiral Horne discussed the main and secondary overseas bases and the shore establishments required to support the planned Navy, and also the personnel needed to man the fleet.

In addition, Admiral Horne elaborated the prearranged plans put into effect on the surrender of Japan for demobilization of materials, supplies, ammunition, and other supplies, as well as personnel, and the cancellation of contracts for planes and public works.

Referring to the post-war mission of the Navy, the Admiral said that to arrive at the objective of maintaining "a naval establishment adequate to the demands of national security and the discharge of any obligations required by the United Nations International Organization" the Navy is working on the "three pressing problems" of rapid personnel demobilization, reduction of shore facilities necessary to support the fleet effectively, and the completion of the contract termination program.

Admiral Horne stressed (1) that the Navy "must preserve an alert, effective, resourceful intelligence service" as "naval intelligence will serve as our first line of defense against possible hostile intent in the future;" and (2) the need of

scientific research and development by an over-all national organization, and separately by the Navy.

To the statement of Admiral Burroughs that the Navy has made only its first approach to the subject of bases in the Pacific, Representative Izac, a member of the committee countered that "Our representatives at the Peace Table should be ready to talk for bases in the Pacific in accord with the recent report of a sub-committee of the Naval Committee, and of any report Admiral Nimitz may make. Representative Mott, a committee member, advanced the opinion that the State Department should acquaint the committee with its plans in relation to bases. To this, Chairman Vinson replied that the Department will be asked to send witnesses to testify before the committee.

Secretary Sullivan discussed the Navy's post-war aeronautical program as it is related to aviation facilities of the Naval Shore Establishment, giving a breakdown of the Designated Stations to be abandoned in whole or in part, the Outlying Fields to be released, and the Outlying Fields to be retained, and stating that there will be 94 permanent Aviation Establishments in the Navy.

## Reduction of Officers

Steps to reduce the grades of officers of the Marine Corps who have not measured up to their advanced rank were taken this week, while in the Army a directive had been drafted, and will be promulgated shortly, providing for the reduction of temporary general officers whose services are no longer needed or who have not performed satisfactorily in their grade.

The Army directive will provide for the reduction in grade of those general officers for whom no suitable assignment is now available, or who have not given satisfactory service in their general officer grade. The boards to be appointed will cull through the entire list and recommend retirement or reduction in grade. However, under present War Department policy, it is not likely that the results of the reports will be made public.

In the Marine Corps the following directive has been issued:

"The Secretary of the Navy has established in Marine Corps Headquarters a board of senior officers to consider and submit recommendations regarding the disposition, by demotion or other action, of officers alleged to be unfit to hold advanced rank. This Board will consider the cases of unsatisfactory and unfavorable reports whether by fitness report or otherwise which might allege the unfitness of officers to hold advanced rank. Findings and recommendations of the board are to be transmitted to the Secretary of the Navy for action, by the Commandant of the Marine Corps.

"The foregoing procedure is in addition to disciplinary and other procedures whereby temporary appointments are now terminated or revoked. In submitting unfavorable or unsatisfactory reports, reporting officers are enjoined to observe the provisions of Circular Letter No. 636 regarding opportunity to be afforded officers reported on to submit statements in connection with unfavorable or unsatisfactory reports."

## Committee Action

The Senate Military Affairs Committee yesterday voted to report favorably the list of general officers to be promoted.

The names of two nominated for the rank of brigadier general, Col. Erle O. Sandlin, AUS, and Col. Luther R. Moore, MC, were withdrawn pending the receipt of further information.

The Committee also voted to report with an amendment the bill providing for voluntary enlistment in the Regular Army. The amendment would change the one year enlistment provisions to 18 months for those who have had six months service.

It was voted unanimously to report the nomination of Judge Robert P. Patterson as Secretary of War.

## Naval Reserve Admiral

The Senate Naval Affairs Committee has reported to the Senate the nomination of Capt. Gilchrist B. Stockton, USNR, to be a rear admiral in the Naval Reserve for temporary service, to continue while serving as naval aide and liaison officer to the United States High Commissioner to the Philippine Islands, to rank from the date of confirmation by the Senate.

## Navy Medical Releases

As a means of maintaining adequate medical attention for evacuation and disposition of wounded and sick still coming from overseas, the Navy Department this week announced that effective 15 September the critical point score for medical corps personnel was set at sixty points.

Declaring that the transportation of wounded required full staffing at the point of departure, enroute to the medical centers in the United States and within the naval hospitals, the Department said that the medical corps will perform a vital function over the next year or eighteen months in the separation process promised for over two and a half million men.

The Navy said that the higher critical score for medical corps release is necessary and that the total of sixty points was based on the following:

½ point for each year of age, computed to nearest birthday.

½ point for each month of active duty from 1 September, 1939.

¼ point additional for each month of active duty outside the United States since 1 Sept. 1939 (effective 15 September, 1945).

10 points for a state of dependency existing as of 15 Aug. 1945.

The Department said that on this basis it is determined that 1,128 medical officers will be eligible for release by 15 September, 1945, 190 additional by 1 November, 1945, 137 additional by 1 December 1945, and 223 additional by 1 January, 1946, or a total of 1,678. Thereafter it is expected that critical scores for release will be lowered by degrees in order to carry out the present plan to separate a total of 8,000 medical officers by 1 September 1946.

Many medical officers in the Reserve desire opportunities for "refresher" training before returning to civilian practice. Assignments to duty in United States Naval Hospitals afford one means of supplying such training, and the average period of time allotted for this specific purpose will probably be about three months, the Navy said.

Officers who elect to continue on active duty for a "refresher" period after becoming eligible for release under the point system may do so if they so request. The request may state that it is understood that this continuance on active duty after eligibility for release is for the purpose of obtaining an assignment in a specific type of service in a naval hospital for "refresher" training.

Periods of assignments of this type constituting active duty in any United States Naval Hospitals officially approved for graduate or residency-type training, may be submitted for credits before the American Colleges and the American Boards with every likelihood of acceptance.

It was also revealed at the same time that plans are projected for the peacetime utilization of medical officers of the Reserve on inactive duty as consultants, lecturers, or otherwise, in naval hospitals near their place of residence. Additional plans are under consideration in which the active assistance of reserve officers is desired and to be enlisted whereby junior medical officers in the regular Navy undergoing graduate training in United States Naval Hospitals may seek and obtain one-year residency appointments in outstanding civilian institutions for rounding-out of their specialty trainings.

## Dependent Transportation

An honorable discharge of an enlisted man or officer in the Naval Reserve paygrade 3 or above including Fleet Reserve and all inductees in paygrade 3 or above is equivalent to release from active duty and they are entitled to transportation of dependents as now authorized, the Navy Department announced this week.

The transportation authorized is to home at the time ordered to active duty or to some other point of equal or less distance.

## Officers Release Pay

Officers issued orders in connection with release from active duty are not entitled to advance pay as provided in Article 1802 Navy Regulations, the Navy Department states.

Orders for separation of aviators will detach them from all duties and not assign duty involving flying en route to or at separation activities.